

languages, among which Santali predominates. Speaking generally, the prevailing language is Bengali, but Oriyā is spoken towards the south and Santali towards the west and north-west of the district.

In the east and north of the district the dialect in common use Bengali, closely resembles the Standard Bengali spoken in the neighbouring district of Howrah; while in the north, near Garhbeta, the dialect is somewhat like the Western Bengali of Bánkura. In central Midnapore the dialect is the variety classified by Dr. Grierson as South-Western Bengali, which shades off into Oriyā and has as great a title to be called a dialect of that language as of Bengali. It might almost be classed as a mixed sub-dialect of Standard Bengali and Oriyā, but it differs from both languages and possesses peculiarities of its own which entitle it to be classed as an independent dialect.*

A corrupt form of Oriyā is spoken in the south of the district, Oriyā viz., in the Contai subdivision, in the southern half of thāna Narayangarh and in thāna Dāntan. It is also spoken in the west of the district by the Aryan population of thanas Gopiballabhpur, Jhārgāon and Binpur. The Oriyā of the south of the district is infected by Bengali peculiarities, and that of the west by the language of the non-Aryan inhabitants who have introduced a certain number of Santali words into the vocabulary. Regarding the character of this form of Oriyā, Dr. Grierson writes:—"The Oriyā of North Balasore shows signs of being Bengalised, and, as we cross the boundary between that district and Midnapore, we find at length almost a new dialect. It is not, however, a true dialect. It is a mechanical mixture of corrupt Bengali and of corrupt Oriyā. A man will begin a sentence in Oriyā, drop into Bengali in its middle, and go back to Oriyā at its end. The vocabulary freely borrows from Bengali, and in North-West Midnapore even from the Santali which is spoken by the aborigines, who there live among their Oriyā-speaking neighbours. All this time, however, the language is Oriyā in its essence. It has put on strange clothes like Peter in the 'Tale of a Tub', but the heart that beats under the strangely embroidered waistcoat is the same. Nevertheless a person speaking this Midnapore Oriyā is often unintelligible to a man from Puri and *vice versa*. According to Babu Monmohan Chakravarti, this mutual unintelligibility is due not so much to actual change in the language as to differences of pronunciation. In Bengali the accent is thrown back as far as possible, but to assist this, the succeeding syllables

* Linguistic Survey of India, Vol. V, Part I, pp. 59-60, and 105-109.

are contracted or slurred over in pronunciation. The same method of pronunciation is affected by the speakers of Midnapore Oriyā. In true Oriyā, on the other hand, every syllable is distinctly pronounced, and the accent is put on the penultimate syllable if it is a long one, and never further back than the ante-penultimate. In Midnapore, too, the written characters are changed. Sometimes the Oriyā character is frankly abandoned, and the language is written in the Bengali character. At other times, when the Oriyā character is used, it is changed by an angular shape being given to the curved tops which are so indicative of "Oriyā writing".

To go into some detail, the language of the Contai subdivision of the Midnapore district is certainly Oriyā, but it is strongly infected by the Bengali spoken to the north across the river Haldi. It is not that a new dialect is formed partaking of some of the characteristics of each and intermediate between each language. On the contrary, the language of the subdivision is a curious mixture of fairly pure Bengali and fairly pure Oriyā, the speakers using words of each language apparently at haphazard and mixing them up in a kind of bilingual sentence. The basis of the language is Oriyā, i.e., the majority of words and grammatical forms belong to it, while the rest are Bengali. In thāna Dāntan and in the south of thāna Nārāyanagar the language is not so much affected by Bengali as in Contai, but it is sufficiently distinct from that of Orissa proper to prevent the respective speakers of these dialects being always mutually intelligible, and a similar want of mutual legibility exists between the written characters of the two tracts.*

Owing to the close connection between the Bengali and Oriyā spoken in the south of the district, the enumerations of persons speaking these languages give very different results. In 1891, for instance, the number of persons speaking Oriyā was returned at 572,796, and in 1901 as 270,495. In the Dāntan thāna of Midnapore Oriyā is now returned as the language of 91,480 out of 123,541 persons; in Gopiballabhpur of 96,287 out of 163,156, in Egra of 57,292 out of 77,884, and in Rāmnagar of 10,741 out of 75,020. The remaining Oriyā speakers are found chiefly in thānas Nārāyangarh, Contai, Jhārgāon and Midnapore.

Santali, which is a tribal and not a local language, is spoken by the Santals of the west of the district in thānas Dāntan Gopiballabhpur, Jhārgāon and Binpur. The total number of persons speaking it was returned at 146,018—a figure exceeded

* Linguistic Survey of India, Vol. V, Part 2, pp. 222-70, 410, 432.

only in two other districts of Bengal, viz., the Santal Parganas (648,847) and Manbhûm (131,687).

Hindus at the census of 1901 numbered 2,467,047 or 88 per cent. of the population, Muhammadans 184,958 or 7 per cent., and Animists 135,050 or 5 per cent., while there were 1,974 Christians and 85 members of other religions. During the last decade the Hindus and Muhammadans have increased slightly at the expense of the Animists, who are found only among the aborigines in the north and west of the district.

The number of Christians has been steadily rising in the Christians last 20 years, being 740 in 1881, and 1,545 in 1891, while in 1901 it was 1,574, of whom 1,545 were natives. The increase in the last decade is to some extent due to the formation of a railway settlement at Kharagpur. Outside the Kharagpur thâna, the Christian community is chiefly found in thânas Midnapore and Salbani, where an American Baptist Mission works, and in thâna Jhârgâon, where there is a Jesuit Mission. After these thânas most are found in thâna Maslandpur (Mahishâdal), where there is a curious colony of Christians near Geonakhâli. They say that they are descendants of some Portuguese artillerymen, whom the Râja of Mahishâdal imported to protect his estates from the Marâthâ raids. Except that they are Christians and that some have Portuguese names, they cannot be distinguished from their neighbours: indeed, in the same family one man may have a Portuguese name, such as Pedro, and another a Hindu name, such as Gopâl.

The most important mission is the American Free Baptist Mission, which was established at Midnapore in the year 1863, a branch being opened next year at Binpur about 20 miles from this station. At Midnapore the mission works among Bengalis, and at Binpur among Santals. The mission also carries on evangelistic work in 8 outstations, including Chandrakonâ and Contai. A Church of England Mission is established at Midnapore and Kharagpur. It began work in 1836 at Midnapore, where St. John's Church was built in 1851; and in 1860 a Trust was formed to guarantee the continuance of mission work connected with the Church of England. It maintains mission schools at Midnapore and Kharagpur. There is also a small Roman Catholic Mission engaged in missionary work among the Santals. A chaplain of the Church of England ministers at Midnapore and Kharagpur, as well as at Cuttack, Puri, Khurdâ Road and Balasore.

Of the total number (184,958) of Muhammadans, no less than 121,044 were returned as Sheikhs in 1901, while ~~modems~~ Pathâns numbered 22,059, Jolâhîs 12,919, Tutiâs 8,057 and Saiyads 7,353. From a report submitted during the census of

1901, it appears that proselytisation is fairly active among this community. "There is," it is stated, "not a village inhabited by Muhammadans which is not periodically visited by preachers and *maulvis*. The visitors do not levy any fee or subscription, but are voluntarily invited to preach from village to village, where they are not only fed very sumptuously, but also offered cash presents in addition. The Hindus generally attend such assemblies and listen to the preachers. The doctrines of Islam are simple enough for everybody to understand, and some of the Hindus renounce Hinduism and embrace Islam. The above cause has been at work from a long time. It never attracted public notice owing to the instances of conversion at any particular place being few and far between, but on the whole it has been the chief cause of the gradual increase of the Muhammadan population."^{*}

**CASTES
AND
TRIBES.**

Midnapore being a district intermediate between Bengal and Orissa, the population possesses characteristics common to the people of both Provinces, which are described as follows by Mr. H. V. Bayley in his Memoranda of Midnapore (1852):—"The people of Midnapore proper are generally composed of an amalgamated race, who can neither be called Bengalis nor Oriyas, but who are a mixture of both. It is not intended to convey by this remark the impression that the mixture observable has been effected so much by intermarriage between the two classes as by the adoption of manners and habits common to both. The people of Midnapore proper are of Bengal and Orissa. Its inhabitants consist of emigrants from both parts, who have by long association with each other lost the salient points of their respective nationalities. But the Beugali emigrants appear evidently to form only a small proportion of the people, from the great prevalence of Oriya family names among all classes of society, as Behara, Giri, Janâ, Mahapatra, Mabikup, Mahanti, Pandâ, Patnaik, etc. The common use also of Khas-Khail and Sawant as family names points to another class, viz., Marathas. The term Khas-Khail was applied to soldiers of the Raja's body-guard in the time of Maratha independence, and Sawant was the family name of a numerous and distinguished class of Marathas. One thing, however, is apparent, viz., that the wealthy landed classes and other gentry of the country are insensibly approximating to the manners of the same class in Bengal." This account still holds good in respect of a certain proportion of the population, but it would be more correct to say that the inhabitants of Midnapore are

* Bengal Census Report of 1901, Part I, Appendix II, p. X.

composed of three classes, viz., pure Bengalis, Bengali-Oriyas, and aboriginal tribes. The Kaibarttas, the great race caste of Midnapore, account for nearly a third of the whole population; the Bagdis, an aboriginal caste, are strongly represented; while the Santals are more numerous than in any district in Bengal except the Santal Parganas and Manbhûm.

Kaibartta	... 883,493	Bhumij	... 44,233
Santâl	... 149,251	Kayasth	... 41,466
Bagdi	... 148,212	Nâpit	... 40,042
Sedop	... 130,861	Kadim	... 39,895
Brahman	... 114,110	Dhoba	... 37,522
Vaisnava (Rastragi)	92,068	Namas-Qdra (Chandali)	... 36,937
Tanti	... 87,798	Kamar and Lohar	... 36,516
Kurmî	... 75,967	Pod	... 28,547
Teli	... 70,886	Sukli	... 28,400
Raju	... 59,000	Kumhar	... 27,933
Goda	... 50,116	Kastha	... 27,625
Karan	... 48,389	Hari	... 27,332

The marginal table shows the different tribes and castes with a strength of over 25,000. Space forbids notice of any but the first five, to which will be added an account of certain castes

more or less peculiar to Midnapore.

Local tradition states that the Kaibarttas were originally ^{Kaibart-} settled on the banks of the river Sarju or Gogra in Oudh, and ^{tas} that they came to Midnapore, led by five chiefs, and conquered it. Sridha Hui, the then Raja of Mayna, is said to have been defeated by Gobardhan Nanda, who took his kingdom and founded a family. This defeat of the Raja of Mayna is the subject of a local poem once very popular, but now seldom read. The five chiefs, according to tradition, established as many principalities, viz., Tamralipta (Tamluk), Balisita, Turka, Sujamutha and Kutabpur. The Sujamutha family is now extinct, the last lineal descendant of the Raja dying some 20 years ago. The Tamluk and Kutabpur families still survive, but have been reduced to indigence, while the Turka family is represented by the Mahapatras of Khunduri. From this tradition it may perhaps be inferred that Midnapore is one of the earliest seats of the tribe and that they once held a commanding position in it. Dr. Grierson conjectures that they entered Midnapore from Orissa and writes:—"The history of their arrival in the district accounts for the very peculiar character of the dialect of Bengali spoken by them. Originally owning some non-Aryan language, they arrived in Midnapore speaking a corrupt patois of Oriya, and on this, as a basis, they have built the dialect of Bengali which they speak in their present home."*

The Kaibarttas have been traced to a very early period, being mentioned as Kevarttas in the *Vayasaneyi Samhita*, as Kaivarttas in the Epics and the *Manu-Samhita*, and as Kevatas in a pillar-edict of Asoka. Not improbably they held the old kingdom of

* Linguistic Survey of India, Vol. V, Part I, p. 106.

Tâmrâlîpti. They seem to have consisted originally of a congeries of tribes, which coalesced owing to the similarity of their functions. As land was gradually reclaimed from the waste and came under settled cultivation, they took more and more to agriculture. The cultivating portion then gradually drew away from the rest and set up as a higher caste with degraded Brâhmans for priests. Their power, wealth and number eventually secured for them a higher social status and an acknowledgment that water might be taken from them (*jaldcharaniya*) by Brâhmans and other higher castes.

The Kaibartas of Midnapore are subdivided into two subcastes, the Uttar Rârhi and the Dakshin Rârhi, the latter being again subdivided into four septs, called Lalchatai, Ekside, Doside and Mâkunda, which are of an uncommon type. The Lalchatai, the highest of the series, appears to be of hypergamous origin. It is explained that they used to have a 'red mat' to sit on, as a mark of social distinction at the meetings of the Kaibartta caste. The next two names are based on a marriage custom. The Ekside, when they go with a wedding procession to fetch the bride, will not eat in her father's house on the wedding night. He therefore sends them a present (*sude*) of food, which they cook and eat in a neighbour's house. The Doside extend this to the night after the wedding and therefore are described as 'two-present men.' Mâkunda is said to be an eponymous group. They carry their own wedding presents to the bride's house, and they eat cooked food with any Kaibartta, whether he belongs to their class or not.*

Socially, the Kaibartas are frugal and industrious, ranking among the best cultivators of the district. A large proportion of the zamindârs and *tâlukdârs*, and most of the iyots, belong to this caste, which represents all interests in land ranging from the proprietor to the cultivator. By religion the great majority are Vaishnavas; and it is said that they pay greater respect to a Vaishnava than to a Brâhman.

Nearly all are cultivating Kaibartas or Mahisyas, and only a small minority are fishing Kaibartas or Jeliyâs, who occupy a very low position in the social scale. The name Mahisha is a new one adopted since the census of 1901, when the Châai Kaibartas urged that they were entirely distinct from the Jeliyâ Kaibartas, and that their proper appellation was Mahisha, an ancient caste of much respectability, which is said to be descended from a Kshattriya father and a Vaisya mother.

* *Traces and Castes of Bengal*, Vol. I, p. 379.

The Santals are found in the undulating laterite country in ^{Santals,} the north and west, where there is ample room for their expansion. A hardy and prolific race, they are multiplying faster than other more civilized races and are settling down as peaceful cultivators and labourers. The date of their settlement in this district is unknown, but their traditions relate that they came to Saont, the modern Silda *pargana*, in the course of their wanderings several centuries ago. Their name is held by some authorities to be derived from this tract of country, Santal being an English form of Saontār or Saontāl. Among themselves they call the tract Santbhui.

The earliest account of the Santals in Midnapore appears to be contained in Walter Hamilton's *Description of Hindostan* (1820), where they are described as follows:—"Some parts of these jungles are occupied by a poor miserable proscribed race of men called Sontals, despised on account of their low caste by the inhabitants of the plain country, who would on no account allow any one of them to fix himself in their villages. The peasantry in the vicinity, by way of distinction, call themselves good creditable people, while they scarcely admit the Sontals within the pale of humanity; yet the latter are a mild, sober, industrious people, and remarkable for sincerity and good faith. The zamindars give them no leases, yet on the whole treat them well; for such is their timidity, that they fly on the least oppression, and are no more heard of. Notwithstanding they hold their lands on such easy terms, and scarcely ever have their verbal tenures violated, they are said to be naked, half-starved, and apparently in the lowest stage of human misery; a result we should not have expected from the character above assigned them. Their villages are generally situated between the cultivated plains and the thick jungles, in order that they may protect the crops of their more fortunate neighbours from deer and wild swine. In some instances they have been known to till their lands with considerable success, and raise good crops of rice and collie (*kalai*), but all that their vigilance can preserve from the ravages of wild beasts, is extorted from them by the rapacity of the money-lenders. To these miscreants, the Sontals, who have but a slender knowledge of the value of money, pay interest at the rate of 100 per cent. for their food, and nearly 150 per cent. for their seed; so that when their crops are ready, little or nothing remains for themselves."

As regards their present distribution there are small scattered Santal villages towards the west, in the hilly north-western

corner of Binpur, with a few larger villages near Silda. These give place further east to *Dikku* (non-Santal) villages containing large stretches of cultivation, as in the neighbourhood of Binpur; but the east of the Kāsai river, where the land belongs to the Rāmgārī and Lālgarh Rājās, is probably one of the most densely populated Santal areas in the district. Further east, in Garhbeta, the villages lie mostly on the western and southern sides of the thāna ; there are a few scattered villages in the north. South of this, the Santal villages in Sālbani lie to the west, verging on the Santal villages in Jhārgrām, where there are large patches of jungle, reserved by the proprietor for his own use. As the river Subarnarekhā is approached, the country becomes less jungly and more fertile. South of the Subarnarekhā, where the land rises towards the hills of Mayūrbhanj and is mostly under jungle, with open spaces here and there, the proportion of Santal villages considerably increases.

Bagdis.

The Bagdis are a caste of aboriginal descent ranking very low in the Hindu hierarchy of castes. They are held to be impure, the Tentuli section alone being held to be a little higher and thus able to give Ganges water. Originally fishermen, they have now mostly become agricultural labourers and *pālki*-bearers. They seem to have consisted originally of several tribes, as the period of mourning varies among them, in some cases lasting thirty-one days as among other Sūdras, in others thirteen days and even eleven days as among Brāhmans. The name is connected with the tract called Bāgri in the north-west of the district ; but it is uncertain whether this name was given to that part of the country in consequence of its having been inhabited by Bāgdis or whether the latter took their name from the country.

The Sadgops are another caste believed to be among the earliest inhabitants of the district. Tradition relates that the first Sadgop family which migrated to this district settled at Nārāyangārī, and it is said that the last Rājā of that place, who died some twenty years ago after having run through a splendid patrimony, was the twenty-third or twenty-fourth descendant, in the direct line, from the founder of the family. The Sadgops claim to be Vaisyās, but they are commonly regarded as a purified sub-caste of Goālās, who have obtained a higher position than the Goālās themselves by adopting agriculture as their occupation. They belong to the Nabasākha group, and Brāhmans will take water and certain kinds of sweetmeats from their hands. They are mostly cultivators, but some have risen to be zamindārs of high position, e.g., the family of the Rājā of Nārājol, which is the leading zamindāri family of Midnapore.

There is one peculiar class of Brāhmans in Midnapore called ^{Brāhmans} Madhyasreni Brāhmans. They profess to derive their name from the fact of their original settlements in Midnapore lying in the Madhya-desa or the country midway between Bengal and Orissa. The following account of them is quoted from Sir H. H. Risley's *Trades and Castes of Bengal* :—“ They say that their ancestors were Rāṛhi Brāhmans, who settled early in Ballal Sen's reign in *pargana* Mayna. When Ballal Sona was engaged in classifying the Brāhmans of the rest of Bengal according to their degree of virtue, he sent a *ghatak* or genealogist to the Brāhmans settled in Mayna to include them in the scheme. They declined, however, to have anything to say to the institution of Kulinism, and there are no Kulins among them to this day. For their resistance to his orders, Ballal Sena ordered them to be cut off from the rest of the caste, and all intercourse between them and the Brāhmans of Bengal proper was strictly forbidden. The Rāṛhi Brāhmans of the present day, with whom the Madhyasreni thus claim kinship, are by no means inclined to accept this legend as true. They point out that it is *prima facie* most unlikely that a colony of Rāṛhi Brāhmans should have left their original seats for no particular reason, and have settled in an out-of-the-way place like *pargana* Mayna. Again, it is said, if the Madhyasreni were really Rāṛhi Brāhmans, how is it that they have eight *gotras*, including Parasara, Gautama and Ghrita Kausika, while the true Rāṛhi have only five? Gautama and Ghrita Kausika are found among the Brāhmans of Orissa, and Parasara is said to be characteristic of the Saptasati Brāhmans of Bengal, whose ignorance of correct ritual compelled Adisura to import the ancestors of the Rāṛhi Brāhmans from Kanauj.

“ On these grounds it is conjectured that the Madhyasreni Brāhmans may be a composite group made up of members of the Rāṛhi, Utkal and Saptasati sub-castes, who for some reason broke off from their own classes, settled in an out-lying district, and in course of time formed a new sub-caste. Some go so far as to suggest that the original Madhyasreni were expelled from their own sub-castes, and quote a local tradition attaching to them the name *Madhyadoshi*, guilty of drunkenness, in support of this view. Although a standard form of Kulinism is not recognized by the Madhyasreni, those families among them who bear the Rāṛhi Kulin names of Mukherji, Chatterji and Banerji are specially sought after in marriage, which practically comes to much the same thing. Another curious form of hypergamy is also in force among them. People who live in the four villages (Bhamua in *pargana* Mayna, Gokulnagar in Chetua, and Mahārājpur

and Bhogdanda in Kedar), supposed to be the original seats of the caste are held in great honour, and residents of other villages who marry their daughters to them are expected to pay a heavy bridegroom price.

"Most of the Madhyasreni are worshippers of the Saktis, but in the matter of religion and ceremonial observances generally they do not depart materially from the practices of other Brāhmans. It should be observed, however, that widows among them are allowed to eat uncooked food on the eleventh day of either fortnight of the moon, while the widows of other Brahmanical sub-castes are not allowed to touch even water on that day. Some Madhyasrenis again serve the Goālās or Gops as their family priests, and others are said to eat uncooked food at religious ceremonies performed by members of the Kaibartta caste, and to accept gifts from them on those occasions." A local report states:—"There is one peculiarity about these Brāhmans which clearly indicates that they have lost the sense of honour to which their brethren in other parts of the country are so keenly alive. Wherever a feast is given on the occasion of a marriage or *srāddha* by a rich man in the neighbourhood, they flock to it without a formal invitation. The Brāhmans in other parts of Bengal would rather starve than go to a feast without being formally invited thereto by the man who gives it, no matter how rich he may be."

Another peculiar class of Brāhmans consists of the Vyāsoktas, who serve the Kaibarttas as priests. Like the Kaibarttas themselves, these Kaibartta Brāhmans are divided into two sub-castes, Uttar Rāṛhi and Dakshin Rāṛhi. Members of the higher caste, who will take water from the hands of the Kaibarttas, will not take it from Kaibartta Brāhmans, and the Kaibarttas themselves will not eat food cooked by their own Brāhmans. The legends of their origin are as follows.

One legend states that they are descended from Barhu, a sage who composed heterodox Purāṇas and was cursed by Brahma, who ordained that he and his descendants should be priests to men of the Sūdra caste. In consequence of this curse the Vyāsoktas were told off to serve the Kaibarttas, the children of Bidur, on the banks of the Sarju river. Another story tells how the Kaibarttas rendered a great service to Ballāl Sen and were told to name their reward. They asked the king to compel the local Brāhmans to serve them as priests, but the Brāhma refused to obey, and the king in order to keep his promise vowed that the first man he saw in the morning should be made the Kaibarttas' priest. Next morning when the king

looked out, the first man he saw was his own sweeper, sweeping out the courtyard. This was not quite what the Kaibarttas meant, but the king's vow had to be kept, so the sweeper was invested with the sacred thread and sent to minister to the Kaibarttas. A third legend says that, after the Kaibarttas had settled in Midnapore, a certain Kaibartta merchant dug a big tank in *pargana* Kāsijora. To consecrate this tank, a Brāhmaṇ had to be got, who could kindle the sacred fire by the breath of his mouth. The Vyasoktas were unequal to this feat, but a Dravida Brāhmaṇ performed it. His caste brethren expelled him for having served a low caste, and he therefore settled in Midnapore.*

The majority of the respectable Brāhmaṇs belong to the great Rārhī group, of which no special account is called for.

The Bhakats or Bhoktas of Midnapore are a small community ^{Bhakata.} of rather less than 3,000 persons. They profess to be descended from seven up-country mendicants who settled in the district twenty-five generations ago. This tradition, however, is at variance with the fact that they are divided into four exogamous septs of a purely totemistic pattern, viz., Shāndilya (from *sāl* fish), Chandrārishi (from Chandkura), Bāmriishi (from the *bām* fish), and Kāshyapa (from *kachchhap*, a turtle). The persons of each sept show great reverence for the object after which it is called and abstain from killing or eating or naming it. It would thus appear that they are an offshoot from some Dravidian tribe, but it is not easy to trace any special affinities. They profess the Hindu religion, and are very strict in their observances. They are served by degraded Brāhmaṇs, and their favourite object of worship is Rāma. Amongst the minor deities Manasā and Sitalā take the first place. Offerings of he-goats and sweetmeats are made to both of them by the males of the caste. Women and children take no part in the worship, and Brāhmaṇs do not assist in the worship of Sitalā.†

The Dandamānjis are a caste, also known as Danda Chhattrā ^{Danda-} Mānji, found mainly in Midnapore. There are five exogamous subdivisions (called *gotras*), viz., Kāshyapa or Kāchhim (the tortoise), Salmāchh (a fish), Depāik (a kind of bird), Chāndkurā-māchh (fish), and Pāt (a fibrous plant). These are totemistic, for the persons of each section or *gotra* show their respect for the animal or plant after which they are named by saluting it and by abstaining from killing, cutting, eating, or in any way making use of it. According to one account, there are three sub-castes,

* *Tribe and Caste of Bengal*, Vol. I, pages 777-78.

† *Bengal Census Report of 1901*, Part I, pages 403-8.

viz., Dandamānjhi, Lohār Mānjhi and Kesaikulia Mānjhi; while, according to another, the only restriction on marriage is based on locality, persons living in certain *parganas* refusing to intermarry with persons living in certain other *parganas*. The caste traces its origin to a Mānjhi, who held the earthen pots (*danda*) containing the resin used for Siva's Charak Puja. By sect the Dandamānjhis are Saktas. They employ degraded Brāhmans and burn their dead, and there is little to distinguish them from other Hindus. They believe their original occupation to have been fishing, a means of livelihood which is still largely followed; some are also cultivators and day labourers. Many of their women are employed as maidservants, even by high caste Hindus, but they are not allowed to touch water used for drinking or cooking purposes. They eat all sorts of fish and also the flesh of such animals as are lawful for Hindus. At the census of 1901 they were treated as a sub-caste of Bāgdia.*

Kadma. At the census of 1901 the number of persons recorded as Kadmas in Bengal was 45,080, of whom 39,895 were resident in Midnapore. Members of this caste catch and sell fish, make and sell lime, carry bamboo frames on which torches are fixed in marriage processions, and perform rustic dances and gymnastic feats (*pākānnach*) at weddings. Their titles are Bhuiyā, Dās, Dolai, Jānā and Patra, and they have five endogamous groups, viz., Kalandi Vaishnava, Mādalbājā, Sankhabājā, Machhbā and Chandali. They belong to the Sal Māchh *gotra* and abstain from eating the *sal* fish. Their priests are usually degraded Brāhman Thākurs, and they will eat the leavings of Brāhmans. The period of mourning is thirty days, but the males do not shave their beards as Hindus do. It appears possible that they are the same as the Oriyā caste of Kandrās, for the Kandrās of Cuttack have the same five endogamous sub-castes, and in Balasore it is said that they belong to one caste, those residing in the south of the district being known as Kandrā and those in the north as Kadma.

Kastha. The Kasthas are a cultivating and landholding caste peculiar to this district and Balasore. The following account of this caste is quoted from Sir Herbert Risley's *Trades and Castes of Bengal*. "It is divided into two sub-castes—Madhyasreni-Kāyasth and Kasthā. The former, who are as a rule wealthier and more highly esteemed than the latter, claim to be the descendants of certain legendary Kāyasts who settled in Midnapore before the time of Ballal Sena, and so completely lost touch with their brethren in Bengal, that even the growth of Kulinism passed

* Bengal Census Report of 1901, Part I, p. 407.

them by unnoticed, and there are no Kulin among them to this day. The same tradition represents the Kāstha as the offspring of these Madhyasreni-Kāyasths by women of lower castes. The theory derives some support from the analogous case of Rajput families who have settled in outlying parts of the country, lost connection with their own people, and inter-married with the women of the land. It is, however, equally possible, and, in my opinion, rather more probable, that both Madhyasreni-Kāyasths and Kāsthas may be the descendants of an indigenous writer-tribe like the Karans of Orissa, the wealthier members of which disowned their humbler tribesmen and sought kinship with the well-known Kāyasth caste of Bengal. The fact that Kāsthas and Madhyasreni-Kāyasths are in possession of very old estates seems to tell in favour of this view.

"Kāsthas marry their daughters as infants, condemn the remarriage of widows, and do not recognize divorce. In one point, however, both divisions of the caste, and even the despised Karans of Orissa, are greatly in advance of the Kāyasths of Bengal. While they accept and act up to the sacerdotal view that untold spiritual evils will befall the man who does not get his daughters married before the age of puberty, they carefully guard against the physical dangers of the practice by forbidding the married couple to cohabit until the bride has arrived at sexual maturity. In matters of religious and ceremonial observances they are at all points orthodox Hindus. Most of them belong to the Vaishnava sect. Madhyasreni-Brahmans officiate as their priests.

"Madhyasreni-Kāyasths occupy much the same position in Midnapore as the Kāyasths in Bengal proper and the Karans in Orissa. Their social rank is high, and Brāhmans take water from their hands. Some of them hold zamindaris and substantial tenures, while the majority are engaged in clerical pursuits. Of late years, however, they have had to compete with true Kāyasths who have immigrated from Bengal and become domiciled in Midnapore. The Kāsthas are for the most part cultivators, tilling their own lands, but in the west of Midnapore a few of them are found holding estates."

The Rājus are a caste numerous only in Midnapore and ~~Rajus~~ Orissa. Their main occupation is cultivation, but a few are money-lenders and zamindars. They trace their origin to a certain Rājā Chauranga Deb of Orissa, who, when encamped at Jaleswar (Jellaoore) or, as some say, Dāntan, fell in love with two girls, the one of the Vaisya and the other of the Dhobā caste. His descendants by the former are known as Daina, and

those by the latter as Bāyan. The females of the former class wind their *sāri* or skirt from the left, and those of the latter from the right side of the waist. The two groups do not intermarry. The Dāina subcaste considers itself superior to the Bāyan, and it forbids the remarriage of widows, which, though discouraged, still takes place occasionally amongst the Bāyans. It is reported that owing to the influence of their progenitor, the Rājus were formerly allowed to intermarry with the Sadgops of Bengal and the Chasās of Orissa, and this is said to account for their family names, of which Ghosh, Pal and Datta are the same as those of the Sadgops, while Janā, Shāhāmal, Padhān, Mahānti, etc., are found amongst the Chasās. The Rājus rank with the Nabasākh group and are served by good Brāhmans. Some of their leading men are beginning to claim Kshattriya origin and to assume the sacred thread. The social and ceremonial practices of the caste are much the same as those of the Nabasākhs. At marriage the essential portion of the ceremony is the binding together of the hands of the bride and bridegroom with *kusha* grass. In the case of virgin wives the right hands, and in the case of widows who marry again the left hands, are bound together. A bride of the Bāyan subcaste ties a small quantity of ashes in the corner of her *sāri*, which is supposed to be a token of her descent from a Dhobā.*

Siyalgirs. The Siyalgirs are a small community residing in the Mohanpur outpost of the Dāntan thāna. They speak a dialect of Gujarati and are supposed to have immigrated from the west some five or six generations ago, but nothing is known regarding the precise time of the settlement or the reasons which led to it. They are said to have thievish proclivities, and may possibly be the descendants of some wandering Bhil tribe which found its way to Midnapore and stayed there. They now follow a variety of occupations; some sell fish, some make and sell bamboo mats, some are cultivators, and a few sell groceries. They profess the Hindu religion, but have no Brāhmans to perform their ceremonies. Their priests are men of the tribe, called Parāmāniks, who have picked up a smattering of religious lore. The dead are buried, not burnt.†

Suklis. The Suklis are a small cultivating caste peculiar to the district of Midnapore. They claim to be the descendants of a Sulanki Rājput named Bir Singh, who came to Midnapore about six hundred years ago and built himself a fort at Binsinghpur in *pargana* Kedārkunda. The fort, of which the remains are

* Bengal Census Report of 1901, Part I, p. 436.

† Bengal Census Report of 1901, Part I, p. 435.

still visible, is flanked by two large mounds, called Mundāmārui and Gardāmārui, the former of which is said to cover the heads, and the latter the bodies, of 700 Bāglis, who were slain by Bir Singh because they could not pronounce the word *hesāh*, meaning a mat made of date leaves. The legend goes on to say that after a time Bir Singh himself was defeated, and that his followers then discarded the sacred thread, changed the name Sulauki to Sukli, and settled down as cultivators.

The internal structure of the caste throws no light on its origin. It is divided into three subcastes--Barabhbāiyā, Bahattarghari, and Dasāsai. The first, which is reckoned the highest in rank, is supposed to be descended from the twelve grandsons of Bir Singh. Their sections are of the ordinary Brāhmanical type. Suklis marry their daughters as infants, forbid widow remarriage and do not recognize divorce. For religious and ceremonial purposes they employ Brāhmans, who, however, are not received on equal terms by other members of the sacred order. Most of the caste are Vaishnavas. They burn their dead and perform the ceremony of *srāddha* in the orthodox fashion on the 31st day after death. Notwithstanding their conformity with all standard observances, the social position of the Suklis is very low. They rank with Ponds and Dhabās, and Brāhmans will not take water from their hands. Agriculture is their sole occupation. A few hold tenures and small zamindaris, the bulk of the caste being occupancy ryots.*

The Tuntias or Tutias are a Muhammalian caste whose traditional occupation is the cultivation of the mulberry tree (*tunt*) for feeding silk worms. Of late years this occupation has become less profitable and many have taken to ordinary cultivation and field labour, while some twist rope from a reed called *sar*. As a community they have a bad reputation, and many of them are professional thieves and dacoits. They are regarded as a degraded class, and other Muhammadians will not give them their daughters in marriage, though they have no objection to receiving Tuntia girls as wives. Males of the ordinary Ajlāf class will usually eat with Tuntias, but their wives will not associate in any way with the women.†

On the occasion of the Snānjātrā, held in Asārh, some 10,000 persons assemble at Gopiballabhpur and bathe in the river Subarnarekhā. On the Bārunī day in Chaitra a religious gathering takes place at Deulbār in the Gopiballabhpur thāna to view the Tapoban, where Lava and Kush, the sons of Rāma, are said to have

* Tribes and Castes of Bengal, Vol. II, Part I, pp. 273-4.

† Bengal Census Report of 1901, Part I, p. 461.

been born. Another religious fair, called the Tulsichaurajat, is held annually in the village of Koland in the Sabang thāna on the day following the Makar Sankrānti festival, which takes place on the last day of Paus. Some 4,000 to 5,000 persons come on this occasion and make offerings to the god Gokulananda. In the Contai subdivision large numbers assemble at Junput to bathe in the sea on the occasion of Paus Sankrānti, and at Egra on the occasion of the Sivarātri. In the Ghātāl subdivision several thousands assemble at Chandrakonā to witness the Rathjātrā or car festival, and another religious gathering takes place at Ghātāl on the Makar Sankrānti day.

Besides these festivals, *punya* day is celebrated with some ceremony in parts of the district. On this, the first day of the *Amlī* year, ryots pay part of their rents to the zamindārs, and customers pay some of their dues to shopkeepers, who in return distribute sweetmeats among them. Among the lower classes Baruni *pūjā* and Ind *pūjā*, which are held in Bhādra (September) in honour of Indra, the god of rain, are occasions of festivity. When the latter is celebrated, a long post is put up in the ground and decorated with flowers, etc. The Charak Puja is another popular festival: a former District Officer states that hook-swinging still goes on, in spite of all efforts made to stop it, and that he has seen fresh hook-swinging mark in the backs of six out of eight *pālkī*-bearers collected by chance. When cholera or small-pox breaks out, the villagers worship Sitalā, the goddess of these epidemics. They also celebrate *Hari Sankirtan* and hold *Chandi Mangal*, *Mahatsab*, *Astam Prahar* and *Chabbis Prahar*, when the name of Hari is shouted day and night and crowds of people are toasted. These terms are explained below.

Hari Sankirtan—A number of persons sing the praises of Hari or God, playing on musical instruments, and sometimes forming processions in the streets. *Chandi Mangal*—A party, like a *jātrā* party, sing songs in praise of Chandi or Durgā, playing on musical instruments. *Mahatsab* is a festival at which offerings are made to Chaitanya or Gaurāṅga, the great Vaishnavite reformer, as well as to his companions and disciples, and a large number of people are feasted. It is also accompanied by *Hari Sankirtan*. *Astam Prahar* and *Chabbis Prahar* are festivals in which people perform *Hari Sankirtan*, playing on different musical instruments and feasting one another. The difference between the two is that the former lasts for a whole day and night, while the latter lasts for three days and nights. In the *Astam Prahar* offerings are made on one day only, while in *Chabbis Prahar* they are made on three days.

The *jātrā* is one of the most popular entertainments in the district. It consists of the performance of a mythological piece, generally selected from the Rāmāyana or Mahābhārata. The performers are organized parties of musicians called *jātrāwāls*, each party consisting of men and boys who represent different characters; the female parts are taken by some of the boys or men with clean-shaven faces. They sing, dance, and also give musical concerts. They are, in fact, professionals, who are hired out to give performances in the houses of well-to-do people on the occasion of the Durga Pūjā and other religious and wedding festivities. They are also engaged for the *bārayāris* organized by the people of one or more neighbouring villages, who raise subscriptions amongst themselves to pay their fees. Usually, the performances are given at night, and are continued for several nights. They are keenly enjoyed by the simple rustics, male and female, Hindu and Muhammadan.

The *bārayāris* or *barādiis* mentioned above are occasional entertainments of a semi-religious character got up in the more opulent villages. The villagers raise a fund for their performances by means of subscriptions, and from this fund the expenses of making offerings to some gods or goddesses are met. The image of the deity worshipped is set up in a public place, and *jātrās* are given at night. Sometimes thousands of rupees are spent by the villagers in this way. *Kabi* is another popular entertainment consisting of matches between parties of professional singers. The headman of one party recites impromptu verses, which are repeated by his followers, and then the other party follows suit. The verses recited generally deal with some religious theme, but in their keenness to outdo one another, the performers, at least in public places, rally and ridicule their rivals with hymns of an abusive character. The whole performance is thus strikingly like that described by Horace :—
Fescennina per hunc inventa licentia morem Versibus alternis opprobia rustica fudit.

When *kirtan* takes place, the praises of the deity are sung by a number of persons, who use several musical instruments and dance in slow time to music. Sometimes one man, with a number of followers, forms a party like a *jātrā* party and recites verses from the Bhāgavat and other religious books, generally in praise of Krishna, his followers repeating them after him. Three or four persons are required for the performance of *goda-bharat*. Their leader recites poems, generally of his own composition, the subject-matter being taken from the Rāmāyana and the Mahābhārata. The singing is accompanied by a quick lively

dance. During the course of the performance the leader makes extempore riddles in verse on any subject selected by the audience. *Champābati* is a play extolling the omnipotence of the deity and the chastity of females, which is performed mainly in the Oriya language. The legend is that Champābati's husband, when going on a voyage, offended a *fakir*, who was really a god in disguise. To avenge the insult, the *fakir* instigated a tailor to metamorphose Champābati into a dog, while her husband and her brothers were transformed into trees. Subsequently the god relented, and with his help a relation of Champābati killed the tailor and rescued his relations. The *pānchāli* is a musical entertainment in which two persons sing sacred songs for the entertainment of the people.

VILLAGE SYSTEM.* In Midnapore the indigenous village system has lost nearly all its vitality, and is now represented only by the village headmen. They too, however, have lost the power and influence they once possessed, and at present are, to a great extent, and throughout almost the whole district, merely creatures of the zamindars. In some instances son has succeeded father in the office of village headman for two or more generations; but the office cannot be called hereditary, as each succeeding appointment is made by the zamindar. Not infrequently the villagers nominate the candidate, but the confirmation of the appointment rests with the zamindar. There are five designations by which the village headmen are known, viz., *baruā*, *mukhya*, *mandal*, *āmin* and *pradhān*, of whose duties, responsibilities and remuneration a brief account is given below.

Baruā. The *baruā* is the headman of a village in the Hijili portion of the district. He acts as the representative of the villagers in important matters, assists police and revenue officers employed on duty, and furnishes information, if required by those officers. He receives gifts from the villagers when marriages and other ceremonies take place, and the zamindar also allows him slight remissions in his rent. The official position and remuneration of the *baruā* have undergone considerable modifications. At the time of the settlement of Hijili, these officers received an allowance of one-half per cent. of the village assessment (*yambandi*), secured by certificates or *chhārs*, which were much prized by the holders. The duties for which the certificate granting the commission of half per cent. was given, were the following. The *baruā* was expected to preserve the boundary marks of the fields, and to point them out when required; to

* This account of the village system is mainly reproduced from Sir W. W. Hunter's Statistical Account of Bengal, Vol. LII, 1876.

attend any officer of Government ; to share in some measure with the *chaukidar* or village watchman the task of keeping order ; and to aid in the internal administration of the village. The direct commission or salary from Government was subsequently done away with ; but the *baruds* still receive the amount, or its equivalent, from the landholders, ordinarily in the shape of a deduction from the rent payable by them to the zamindars. The appointment and dismissal of *baruds*, which were formerly made by the zamindars with the general consent of the villagers, now rests with the Collector and Magistrate of the district, by whom registers of them are kept.

The *mukhya* is the headman of a village in the permanently-settled parts of the district ; what the *barud* does in Hijili is done by the *mukhya* in other parts of Midnapore. His appointment and dismissal, however, rest with the zamindar. He gets no salary or remission of rent from the zamindar, but receives presents from the villagers on their marriages and other occasions.

The *mandal* is also the headman of a village, chiefly in the jungly western tract. Being the tenant-in-chief, he sees to the cultivation of the village lands, and to the settlement of under-tenants on them. In some parts of the district the *mandal* is the same as the *mukhya* described above.

The *pradhān* is an officer found in the west of the district, who undertakes and is responsible for the collection of rents from the villagers. He sometimes holds one large village and sometimes several small villages, and receives as his remuneration 12½ to 15 per cent. of the gross assets of the village or villages assigned to his charge. His post is generally hereditary, but he can be turned out if he defaults. The *mahaldar* is an officer responsible for the collections of several *pradhāns* and for their payment to the zamindar.

The *āmin* is one of the principal cultivators, whose customary duty it is to give receipts certifying service of court processes, and to wait on and help the police or other public officers in their inquiries regarding offences, revenue matters, etc. The *āthgharia* performs the same functions in the Hijili tract as the *āmin* does elsewhere. The name *āmin* is also given to the landlord's servant, whose chief duty is to measure the lands of cultivators when there are disputes among them about boundaries, etc., or for the purpose of assessing rent on the part of the zamindar.

The *bhadra* is an officer selected by the general consent of the villagers to be a general referee. Sitting with the *mukhya*, he settles disputes between the villagers. On marriages and other occasions he receives some token of respect from the

villagers, which ordinarily takes the form of betel-leaves and nuts.

Among other persons who play an important part in village life, the following may be mentioned :—

The *purohit* or village priest, who is usually a Brâhman, worships the idols in the houses of his constituents, and utters sacred formulas (*mantras*) at marriages, funeral rites, and other religious and social ceremonies. He is paid by a money remuneration called *dikshina*.

The *yanak* or *âsharjya* is an astrologer and fortune-teller. He is eagerly sought after by the villagers to tell them how to find or recover anything that is missing or lost, to give accounts of the health of absent relatives, and to prescribe a propitious moment for the commencement of important business, and so forth. The smallest remuneration that he gets consists of two pounds of rice and a betel-nut, or a pice and a betel-nut. In old times *yanaks* obtained rent-free lands from the zamindars, called *yanakkottar*.

The *gunin* or *guni* is a person, who exorcises people believed to be possessed by an evil spirit or under the influence of a witch; also houses which have the reputation of being haunted, or individuals who have been bitten by poisonous snakes. The villagers place superstitious confidence in a *gunin*, and credit him with the power of counteracting the evil effects of charms and incantations. He is generally remunerated in money.

The *pardanik* is the headman among the lower castes. He decides questions affecting their caste and other social matters, and receives in return tokens of attention from them in the shape of presents in money, grain, or clothes.

The village system in the Jungle Mahâls, i.e., the tract to the west of Midnapore which is largely inhabited by Santâls and other aboriginal tribes, is described as follows in a report on the Nayâbasân estate submitted in 1883-84: "The rents in general are collected not from the cultivators direct, but from the representative ryots, called *mandals* or *pradhâns*, who are generally appointed from among the people of the place for five to seven years. They sometimes hold one large village and sometimes a group of several small villages. They receive for their remuneration usually from 12½ to 15 per cent. of the gross assets of the village or group of villages assigned to their charge. The post of a *mandal* or *pradhân* is, as a general rule, treated as hereditary, but when a *pradhân* defaults, he can be turned out. He is responsible for the rent of his area, whether he collects it or not from the ryots. If a ryot defaults, the *pradhân* has

to sue in the Civil Court. The *pradhān* does not furnish accounts. This is the system prevalent in the jungle mahāls of Midnapore. In the few villages which are now under *khās* collection properly so called, i.e., in which collections are made by *gurudashtas* paid by the estate, there were formerly *pradhāns* who fell into arrears and were therefore ousted.

"In each large village, or in each group of two to five small villages, there is a *barua*, a *chankitār*, a *chetyal* and a *duria*. The *barua* gets Rs. 2 or Rs. 3 a year from the estate, and sometimes from the villagers. The remuneration he gets from the zamindār is paid by the *pradhān*, who recoups himself by adding it to the *saranjami* or collection expenses he receives from the estate. The *barua*'s duty is principally to assist in collecting the rent. Each *chankitār* holds free of rent 10 *bighās* of land from the estate in lieu of wages. His post is generally hereditary. The *chetyal* is paid Rs. 2 or Rs. 3 per annum by the *pradhān* from his *saranjami*, but he is appointed by the estate. The *duria* is in charge of the *pūjā* or worship expenses of the village idols. He holds a small quantity of rent-free land to defray the expenses of worship as well as for his own maintenance. He also receives occasional contributions from the villagers. Besides the above village servants, there are 68 *paiks* in the two divisions of the estate (Navābasān and Rohini). Over every ten or twelve of these *paiks* there is a headman known as *bhaluk*, and over four *bhaluks* there is a headman called *dalbehārā* or *dolsedar*. The duties of the *dolsedars* are to assist the estate in the collection of rent from the *pradhāns* and sometimes (when deputed) to assist the *pradhāns* in their collection of rent from the ryots. They also keep watch at the estate *kachharis* and do other such work. To each *paik* are assigned 15 *bighās* of land in lieu of wages; similarly, to a *bhaluk* 25 *bighās*, and to the *dalbehārā* 40 *bighās*."

The following account of village customs in Patāspur is quoted from the report on the settlement of eighteen temporarily-settled estates in that *pargana* by Bābu Girish Chandra Datt (1898) : — "This *pargana* originally formed a part of Orissa and was not included in the district of Midnapore till 1825. The customs of the people of the *pargana*, therefore, are more like those of the people of Orissa than like those of Bengal. All the old families are Oriyās by origin, and so have the same customs and traditions as the Oriyās. The cultivators always consult the village astrologer or their almanacs, if they can read themselves, as regards auspicious days for beginning work at every important stage of the agricultural operations, such as ploughing,

sowing, harvesting, etc. On every full moon and new moon day ploughing is forbidden. On the Sankrānti day (*i.e.*, the first day according to the Amlī almanac) of Bhādra, Aswin, Kārtik, Māgh and Chaitra ploughing is prohibited. Besides the above, there are over forty other days in the year, such as Akshaya Tritiyā (third day of the full moon of Baisakh), Dāshahā (tenth day of the full moon in Jaista), Ambubāchi (first three days of Asārh), Durgā Pūjā, etc., on which peasants refrain from ploughing. The Telis or oilmen also stop their oil-mills, which are drawn by bullocks on those days on which ploughing is prohibited. These are observed not only as days of rest, but also of worship.

"On the three days of Srabana Nakshatra (a certain constellation of stars) in every month no work of tying or binding, such as thatching, *tatti* preparing, etc., is done. On the Akshaya Tritiyā day (third day of the new moon in Baisakh), every ryot must begin sowing, at least he must scatter a few handfuls of seed grains on the north-east corner of his field, without ploughing the same. On the first day of ploughing (for which auspicious days are indicated in the year's almanac) the ploughshare is worshipped by the farmer, and the plough is drawn only two and-a-half times north to south across the field. But there is another tradition according to which, if it rains before the *khāmār* or threshing floor is cleared of paddy in the preceding year, then ploughing may be begun on any day, and there is no need for an auspicious day for the purpose. Reaping is generally begun on a Friday in the new moon of Kārtik or Aghrān. The first sheaf cut is brought, and kept on the thatch of the bedroom. On the plot of land which is reaped last, three paddy plants, which are separately cut, are buried.

"Then on the Makar Sankrānti day (Oriyā first day of Māgh) the buried plants are exhumed, and are worshipped. The plants are then brought and kept with the first-cut paddy plants on the thatch of the hut. Then the whole is placed on the *khāmār* and worshipped after evening when the jackal's cry is heard. It is believed that the harvest next year will be best in the direction from which the jackal's cry is first heard on this occasion. The *khāmār* worship is done by the peasants themselves, and not with the aid of priests. On the Garbhān Sankrānti day (the first day of Kārtik) branches of *garbhān* trees and certain weeds and other things are fixed in the fields, houses, and places of worship as safeguards against casualties happening to the crops. On the Gobardhan Jātrā day (the first day of the new moon of Kārtik) the peasants worship their cattle with garlands of flowers, etc., and

on the Gomāh Pūrnimā day (full moon day of the month of Srāban) cattle are also worshipped and fed with cakes and grass. On the first day of Aswin (Oriyā month) all blacksmiths, goldsmiths, carpenters, masons, and potters worship their respective implements of art, which they call Biswakarma *pūjā*. On that day, and on the day following, they do not touch their instruments."

CHAPTER IV.

PUBLIC HEALTH.

GENERAL CONDITIONS. IN the north and north-west of the district there are lateritic uplands with intervening depressions, which ensure a good system of natural drainage. Fever is not so prevalent as in the low-lying country ; and the people, who are mainly hardy aborigines, escape, to a large extent, the epidemics of cholera and small-pox which break out nearly every year in other parts of the district. The second natural division consists of the alluvial country, much of which is water-logged and the home of malarial fever. It is exposed to inundation from the numerous fresh-water and tidal rivers which traverse it. Large embankments have been built along their banks to protect the fields, but breaches are apt to occur during the rains, and then many square miles are submerged, the outlets being insufficient to carry off the flood water. This affects the public health in two ways. On the one hand, the flood water scours out holes and ditches, and carries off surface filth and rotting vegetation, depositing a protective layer of silt. On the other hand, the stagnant water, slowly drying up, affords a congenial breeding ground for malaria-bearing mosquitoes. There are thus two divergent effects. At first, the flood water cleanses the country and cholera disappears. After the floods are over, there are large collections of stagnant water, and fever becomes rife.

As regards the different subdivisions of the district, the Contai and Tamlük subdivisions, which lie along the sea-coast and the estuary of the Hooghly, are comparatively free from malaria. The Ghātal subdivision further north slopes back from the bank of the Rūpnārāyan ; the soil is a rich alluvium, but much of its area is liable to floods, and though excellent crops are reaped, the inhabitants suffer greatly from malaria. The headquarters subdivision consists, in the north and west, of thinly wooded and rocky uplands ; here the laterite soil is dry and the climate is good. Towards the east and south the level dips, and a swampy hollow is formed between the elevated country to the west and the comparatively high ground along the coast. In the Ghātal subdivision conditions are similar, the north and west being fairly

high, while the south and east are swampy and subject to severe malarial fever.

The prevailing diseases of Midnapore are malarial fevers, PRINCIPAL with their various sequelæ, bowel-complaints, e.g., dysentery DISEASES, and diarrhoea, small-pox and cholera. Hepatitis and spleen affections are common, especially in certain tracts. Elephantiasis is frequent in the littoral and swampy portions of the district, and cases of leprosy are occasionally met with.

The types of malarial fevers most frequently diagnosed are Fevers. quotidian and tertian, both double and single, the quartan not being so common. Other fevers observed in Midnapore are seven-day and fourteen-day cachexial fever.

The following are also reported :--(1) Bilious remittent fever is a distinct type and very common. (2) Typhoid fever, without the typical rash and haemorrhage, but with other characteristic symptoms, such as temperature and intestinal symptoms. (3) Thermic fever of a mild type due to exposure to the sun's rays. Headache, vomiting and high temperatures are characteristic symptoms; it is very amenable to treatment. (4) Cerebro-spinal fever occurs at all times of the year sporadically. (5) Influenza is very common, especially during the changes of the seasons. (6) Inflammatory types, specific and non-specific. (7) Elephantoid fevers, which are very common.

The district suffered severely from the epidemic of fever known as Burdwan fever, which is now believed to be not malarial, but due to infection with the Leishman-Donovan body, and akin to, if not identical with, *Kala-azar*; it is also known as cachexial fever. This fever made its appearance in the north of the district in 1871. Next year a great southern extension took place, the epidemic passing from north to south through the whole of the alluvial country in the centre of the district. The third year the epidemic was at its worst, the mortality being twice as great as in the preceding year, but in 1874 it was less fatal and less prevalent. In 1875 the same facts were observed again, and what fever there was wanted the virulence of the epidemic, and had some of the characteristics of the ordinary seasonal malarious fever of the country.

During the first year of its invasion the fever was mild; there was a simultaneous increase of the general endemic fever, and a subsidence of both, usual at the end of the fever season. In the second year the fever began earlier, lasted longer and caused greater mortality. During the third year the disease was marked with still larger fatality both from primary attacks and secondary complications, the systems of those who had survived the two

previous years being now so undermined that they had little power to resist the attacks of the fever and fell rapid victims to it. During the fourth, fifth and sixth years (six years being the average duration of the fever in any place), there was a general slow recovery; the fever in each successive year attacked fewer persons, was of a less fatal type, and prevailed for a shorter period. It finally disappeared altogether in the seventh year, but left many of its victims with permanently enlarged spleens and other sequelæ. The total mortality caused by the epidemic in Midnapore during the years in which it raged was estimated at 250,000.

Another severe epidemic broke out in the east of the district in 1881, which subsequently spread southwards, losing its violence, however, as it extended. It ultimately made its influence felt in the tracts forming the coast belt of Tamluk and Contai. Its progress was not uniform but subject to local and seasonal variations, and, where it was most persistent, it left its impress in the shape of cachexia and spleen.

Cholera. Cholera is endemic in the district and is practically always present in some part or other of it. At times the disease appears in village after village, especially in some parts of the Tamluk and Contai subdivisions, selecting a few victims from each but causing a heavy mortality on the whole. It is more especially prevalent in the hot weather just before the rains, when both well and tank water becomes scanty and foul, and subsides with the breaking of the rains. Outbreaks also appear in the cold weather months of December and January. The number and severity of the epidemics have diminished since the opening of the railway, as the pilgrims going to and from Puri no longer throng the roads, spreading the disease in their train.

Small-pox. The mortality from small-pox is as a rule inconsiderable, but occasional epidemics break out. The worst on record occurred in 1902 and caused 17,841 deaths, representing a mortality of no less than 6·39 per mille.

Dysentery. Dysentery is common in Midnapore, and in the Central Jail the mortality due to it has long been the subject of special attention. Two forms are commonly met with, viz., a simple form amenable to treatment, if prompt and suitable, and a chronic relapsing form, which is frequently imported with the prisoner and which is very difficult to treat successfully. A special investigation into the causation of the disease was made in 1906-07 by Captain W. E. H. Forster, I.M.A., by whom a method of vaccine therapy was introduced with the result that

the death-rate due to dysentery fell from 25.8 per mille in 1906 to 3.8 per mille in 1907.

The following is a brief summary of the more important conclusions arrived at:—Jail dysentery is most commonly due to the bacillus of Shiga. Amoebæ are very seldom found in primary attacks, and are much more frequent in chronic cases with a history of previous attacks. Dysentery, according to Captain Forster, is not spread by dust, nor by water, nor by infection of the food-supply, nor by suctorial insects, nor by soil infection, nor does the infection cling to wards or buildings. All the available evidence points to the spread of dysentery by case-to-case infection and by convalescents as bacilli-carriers. Each recovered or convalescent dysentery patient retains in his intestines for a longer or shorter period a large number of the dysentery bacilli and passes them in his stools, even after apparent recovery. The extra-corporeal stage of dysentery is very short. Blankets and prison clothing were saturated with living emulsions of the dysentery bacilli, and on exposure to the sun's rays the bacilli were killed in two hours. Again, blankets and clothing saturated by dysentery bacilli emulsions were put away stored in almirahs, and the bacilli were found dead within three days.

The curve of dysentery cases closely follows the rainfall curve, the dysentery curve attaining its maximum one month after the rainfall curve. The period of minimum incidence corresponds with the dry hot months. Most of the dysentery cases that were examined occurred either among under-trial prisoners, or in the segregation wards, i.e., among recent arrivals from outside, or among the convalescent gangs, i.e., among those who had recently been more or less in contact with cases in hospital. Cases of dysentery due to Shiga's bacillus are liable to assume a chronic or relapsing character, and convalescents of this type are very dangerous as carriers and spreaders of the bacilli. From the above the following measure of prophylaxis are to be deduced:—(1) General attention to sanitation. (2) Early admission and prompt treatment of cases. (3) Detention of cases in hospital till they have become "absolutely well for at least a fortnight." (4) The segregation of convalescents for at least a month after their discharge from hospital.*

Stone in the bladder appears to be common in the Contai subdivision, a paper published by Babu Jadab Krishna Sen, Assistant Surgeon at Contai, showing that he met with 127 cases in less than eleven years, viz., renal calculi (3), vesical (71),

* Administration Report on the Jails of Bengal for 1907, p. 10.

Stone in
the
bladder.

urethral (52), and preputial (1). Regarding its causation, he wrote :—“The principal cause of stone amongst the people of Contai appears to me to be the disorders of the digestive system associated with the elephantiasis of the upper and lower extremities and thickening of the lymphatic vessels and glands. I noticed similar disorders of the digestive system associated with goitre amongst the people of Ganda and with hydrocele amongst the people in Fyzabad, in Oudh, where stone is very common. There was nothing common in them as regards food, climate, locality, habits and physical conditions, and other predisposing causes which influence the formation of stones. I have seen the weak and indolent Bengalis of Contai, who live upon rice and fish, and inhabit a tract of country bordering on and almost on the same level with the sea, suffer equally with the strong and energetic Rajputs, who not only live upon wheat and meat, but also inhabit a dry and elevated country several hundred feet above the sea-level. The only thing I observed common in them was disorders of the digestive system associated with glandular affection. . . . The stones in most of my cases were small and fit for removal by crushing.” *

The marginal table shows the number of persons afflicted per

INFIRMIERIES.

	Male.	Female.
Blind	97 87
Lepers	91 31
Deaf-mutes	59 81
Insane	86 19

100,000 of the population according to the census of 1901. In the case of lepers the proportion is considerably above the average for Bengal as a whole, but in the case of deaf-mutes it is below it;

while in the case of insane and blind persons the figures are very much the same. The number of successful operations for cataract during the five years 1896-1900 was 246 (198 males and 48 females).

VACCINATION.

Vaccination is only compulsory in the towns of Midnapore, Ghâtsâl, Kharâr, Chandrakona, Ramjibanpur, Khirpai, and Tamluk, being introduced in Kharâr in 1889, and in the other towns in 1883. Altogether 1,23,694 persons were successfully vaccinated in 1907-08, representing 45·82 per mille of the population, while the average annual ratio for the preceding five years was 39·26 per mille. The number of infants protected by vaccination in the same year was no less than 57·9 per cent. This record is better than that of most other districts of Bengal, but the reverse was the case a few years ago, when it was reported that vaccination was extremely backward in Midnapore, a smaller proportion of the people being protected than in any other regulation district of the Province except those of Orissa.

* *Indian Medical Gazette*, 1902, pp. 311-12.

Inoculation was formerly common, and, even after the extension to the district of the Act prohibiting it [IV (B. C.) of 1865], was habitually practised in villages along the sea-coast for some years. It was continued clandestinely in some areas only twenty years ago, but has now disappeared, and vaccination is accepted readily by the people.

The following table contains a list of the Government dispensaries of the district and gives the salient statistics for them during the year 1908. The oldest of the dispensaries are those at Midnapore established in 1835, Tamluk (1851) and Garhbeta (1868). The dispensaries at Midnapore, Contai and Nandigram have an invested capital of Rs. 31,000, Rs. 2,400 and Rs. 5,200 respectively :—

MEDICAL
INSTITU-
TIONS.

NAME OF DISPENSARY.	INCOME FROM—						TOTAL NUMBER TREATED			Daily average num- ber in patients.	Daily average num- ber of outpatients.	
	Municipal Grant	District Board Grant	Government Grant	Private sub- scriptions, endowments, etc.	Total.	Expenditure.	In-patients.	Out-patients	Total.			
Chandriknâk	700	315	980	102	1,517	1,291	8,402	8,412	167	92.38	86.62	
Contai	..	360	1,431	1,062	2,813	2,901	167	15,550	15,747	6.61	61.70	
Dantan	..	186	867	1,217	2,230	1,740	158	10,003	10,161	4.66	33.67	
Garhbeta	..	336	207	602	1,105	1,250	..	3,116	3,116	..	21.70	
Gorakhpâl	..	780	12	134	1,029	745	32	4,145	4,177	0.56	34.92	
Ghatâl	1,200	180	713	288	2,551	1,463	71	5,945	5,316	37.83	32.17	
Khurkrâ	..	655	240	11	257	1,170	942	..	5,123	5,123	..	
Khirpaî	..	600	225	118	59	605	708	..	35.10	
Midnapore	3,600	2,550	775	6,720	13,845	11,256	653	9,759	10,112	34.82	69.83	
Nandigrâm	..	360	110	1,020	1,490	1,320	..	6,015	6,015	..	32.41	
Ramgâlinpur	207	204	514	100	1,004	1,094	..	5,155	5,155	..	34.54	
Tamluk	..	1,115	180	484	864	2,043	2,051	76	6,245	6,321	27.92	35.64

CHAPTER V.

AGRICULTURE.

**GENERAL
CONDI-
TIONS.**

THE south and east of the district are an alluvial tract similar to most districts of the Gangetic plain in Lower Bengal. The rainfall is considerably greater than in the uplands to the north, and the soil, which consists of sand and clay brought down by the great rivers from the country above, produces abundant crops of rice. Along the ~~sea-coast~~, and in the low-lying country traversed by tidal rivers and creeks, it is necessary to raise embankments called *beris* to keep out the salt water. Other rivers are liable to sudden freshets after heavy rainfall in the neighbouring hills, and, their beds being in many cases higher than the cultivated land, are apt to overflow and cause serious damage to standing crops. When such inundations occur, large areas are laid waste by deposits of sand, while the lower ground is converted, for the time being, into a lagoon. To keep out these floods, many embankments have been constructed round considerable areas, called "circuits." Cross-dams are also erected in the beds of most of the non-tidal rivers, which are mere streams in the dry weather, in order to divert the water to the cultivated lands in their neighbourhood. Much of the alluvial tract is consequently covered with a network of embankments and cross-dams, one result of which has been to restrict the action of the tides and so to cause the mouths of the rivers to silt up. Consequently, after heavy rainfall the drainage is imperfect and large tracts are water-logged.

The north and west of the district consist mainly of a lateritic upland tract, sloping upwards towards the Chotā Nagpur plateau, and still largely covered with scrub jungle, in which the best lands are found at the bottoms of depressions between successive ridges. These low lands are highly valued, both because they form catchment basins retaining moisture, and also because the soil is enriched by the detritus washed down from the slopes. Rice is grown in such depressions as well as along the slopes of ridges (*sholds*). There is much terraced cultivation on the latter, the fields being laid out in a series of steps each higher than the

other. They are enclosed by small artificial banks, by means of which water is retained and allowed to drain off on to the fields below. Maize, millets, oil-seeds and pulses are grown on the uplands, but the crests of the ridges are infertile, though they are well suited for the growth of trees, such as *sal*, tamarind, and *mahuā*. Speaking generally, the soil in this part of the district is on the whole poor, being composed of laterite and coarse sand, sometimes cemented together in a more or less coherent mass, at other times remaining loose and gravelly, and passing by various gradations into sandy clay with a few ferruginous nodules.

The main source of irrigation is the Midnapore high-level canal, which takes off from an anicut across the Kasai river just below the town of Midnapore and runs eastwards to Uluberia on the river Hooghly. An account of this canal will be given in Chapter VII, and it will be sufficient to state here that on the average 76,000 acres were irrigated annually from it and its distributaries during the ten years 1891-1900, while 70,419 acres were irrigated in 1907-08; the maximum area irrigated was 104,149 acres in 1881-82. Practically all the area irrigated by this canal is under winter rice, 90 per cent. being sown broadcast. Experiments made by the Public Works Department in a year of good rainfall on irrigated and non-irrigated lands in the area served by the canal show that the outturn per acre is :—(1) 23½ maunds of paddy and 69 maunds of straw in irrigated lands; (2) 20½ maunds of paddy and 54 maunds of straw in non-irrigated lands.

Water is also obtained for irrigation by means of embankments built across drainage slopes and low-lying depressions. These embankments (*bandhs*) form small reservoirs, in which water accumulates during the rainy season. When the rice fields require water, the *bandh* is simply cut in a few places, and water is thus let on to the fields at a lower level. Small dams are similarly built across the beds of streams, by which water is impounded for the irrigation of rice grown below their banks. The water in tanks is also used for the purposes of cultivation, but there is little or no irrigation from wells.

There are two water-lifts in common use for irrigation, viz., the *sinni* and *dongā*. The *sinni* is a thickly woven triangular-shaped bamboo basket with four pieces of rope attached to it. Two men, each holding two ropes, and standing on either side of the mouth of the channel, through which the water is carried to the fields, lower and raise the basket with no little dexterity. If water is required at a higher level,

IRRIGA-
TION.

Water-
lifts.

it is raised to the level of the field in two or more stages, each requiring as many sets of men. As this considerably increases the cost of cultivation, this mode of irrigating land is seldom resorted to when the height is great. Two men in a working day of eight hours can raise sufficient water for irrigating one *bighā* of sugarcane.

Water is sometimes raised from tanks or *jhils* by a canoe-shaped wooden vessel called a *dongā*. One end of the *dongā* rests on the mouth of the channel by which the water is led to the field. The other end is attached by a rope to a long bamboo pole, which rests on the forked branches of a tree trunk or on two uprights fixed near the mouth of the channel. A lump of earth or stone at the opposite extremity of the pole counterpoises the *dongā*. A man successively raises and lowers the *dongā* by means of the rope and can irrigate about one *bighā* a day.

CLASSES OF LAND. Cultivable land may be divided into three classes, viz., high land, low land, and *diāra* or river land. The high land round the village-sites, which is more or less sandy, and is either above ordinary flood level or dries up in time to enable it to be sown with *rabi* crops, is called *kāla*. It is subdivided into *bāstū* or homestead land, and *dhosa*, i.e., land which during the rains is sown with *aus* paddy and in the cold weather bears a second crop of pulses or oilseeds. The low-lying lands separating the village-sites from one another are called *jālā*. This land is mostly clayey and is under water during the rains. Practically the only crop grown on it is rice, but in rare cases, when near homesteads, a little summer *til* is grown. *Diāra* lands formed by river silt deposited on the beds and sides of rivers are the most sought after by the ryots, as they are renovated every year during the rains by a deposit of silt and require no manure. They are most suitable for growing *rabi* crops, pulses, wheat, barley, oil-seeds and various vegetables. In the Contai and Tamluk subdivisions cultivable land is called *madhur*, or sweet, as opposed to *nimaki*, or land impregnated with salt.

SOILS. In the alluvial tract a clay soil is known as *entel* or *ethel*, loam as *doash*, *dorash* or *doseta*, and sandy loam as *bele doash*. In the laterite tract the soils are mostly loam and sandy loam, having the same names as in the alluvial portion, but their colour is reddish-brown, and they are inferior in fertility to the corresponding types of soil in the alluvial tract.

Clay soil is subdivided into the following classes :—(1) *Ghara ethel*, a very hard clay, the colour of which varies from blackish to yellowish. It is a poor soil requiring much manuring. (2) *Nora ethel* or *kush mati* is found near the sea and the tidal rivers

and *khals*. It is impregnated with salt, and is unfit for cultivation. Sticky and slippery during the rains, it gets very hard during the dry season, when it has a white coating over the surface. (3) *Banmali* (sometimes called also *pashu mali*) is a soft soil of a reddish colour suitable for rice. (4) *Dudhe ethel* is a soft white soil used for making mud walls. (5) *Kala ethel* is a black soil used for making pottery. *Pani mali* is marshy land; *paili mali* is river silt; *pank mali* is ditch mud; *khit mali* is earth from near the ryot's house where cow-dung, ashes and house-sweepings are deposited.*

The following table shows the normal areas under the principal crops and the percentage of those areas on the normal net cropped area of the district, according to statistics compiled by the Agricultural Department :—

Name of crop.	Normal acreage.	Percentage on normal net cropped area.	Name of crop.	Normal acreage.	Percentage on normal net cropped area.
Winter rice	1,400,000	45.8	Summer rice	6,000	...
Sugarcane	20,300	1	Wheat	2,000	...
Total, <i>Aghasi</i> crops ...	1,426,300	71	Barley	1,200	...
			Gram	2,500	...
Autumn rice	106,600	5	Other rabi cereals and pulses.	161,000	8
<i>Bajra</i>	8,100	...	Other rabi food-crops ...	47,300	2
<i>Masud</i>	2,000	...	Linseed	15,000	1
Indian-corn	21,300	1	Rape and mustard ...	31,000	2
Other <i>bhadoi</i> cereals and pulses.	48,600	2	Til (rabi)	20,500	1
Other <i>bhadoi</i> food-crops ...	23,800	1	Other oil-seeds ...	14,500	1
Jute	11,500	1	Tobacco	3,900	...
Til (<i>bhadoi</i>)	10,800	1	Late cotton	2,200	...
Early cotton	1,900	...	Other rabi non-food crops	52,400	3
Other <i>bhadoi</i> non-food crops.	54,200	3	Total, Rabi crops ...	860,100	18
Total, <i>Bhadoi</i> crops ..	286,000	16	Total cropped area ...	2,072,400	103
			Orchards and garden produce.	20,800	1
			Twice cropped area ...	73,000	4

From the preceding table it will be apparent that the staple Rice crop of the district is rice, and that the principal harvest is that of the winter crop called *harivantik* or *aman*. This is sown in the

* D. N. Mukharji, *Note on the Soils of Bengal*, 1909.

months of Juro, July and August, and is reaped in November, December and January. In the most highly cultivated parts the seed is first sown in nurseries and afterwards transplanted into moist fields especially prepared for it, but the greater portion is sown broadcast. The *dus*, or autumn, rice is sown broadcast on dry land in the months of April, May and June, and is reaped in August and September. *Boro*, or summer, rice is sown broadcast in October and November, and is cut in March and April; it usually requires irrigation.

Amlā is the name of another variety of rice sown in June and July and cut in September and October. There are three other kinds of rice called *kakri*, *jhānji* and *nuān*, all of which are sown on high lands in May and June and are reaped after the close of the rains. In the marshes a description of paddy called *kānki* grows to a height of $4\frac{1}{2}$ to $4\frac{3}{4}$ feet. The depth of water required for this paddy is from 2 to $2\frac{1}{4}$ feet in all stages of its growth. Another variety, which is called *pankai*, attains a height of from 3 to 4 feet, and requires a depth of water varying from 4 to 6 inches when it is transplanted, and from a foot to $1\frac{1}{2}$ feet when it is fully grown. Land on which winter rice is grown seldom yields a second crop, but wheat, barley, peas and linseed are grown on land from which an early rice crop has been taken.

Other cereals and pulses. Practically the only other cereals grown in the district are wheat and barley, which are raised in very small quantities, and maize, which is grown to a greater extent, especially in the west.

Peas, *birhi* (*Phaseolus mungo*), *chola* or gram, *mung* (*Phaseolus radiatus*), the common lentil called *masuri*, *arhar* (*Cytisus cajan*) and *kheērī* (*Lathyrus sativus*) are the principal varieties of pulses grown in the district.

Oil-seeds. Mustard and rape, sesamum or *til*, linseed and *sargonja* are the chief varieties of oil-seeds. Two kinds of mustard and rape are grown in this district, viz., *kajli* and *madhubani* or *rai*. The former is a small plant with black seeds giving the best yield. The *madhubani* plants are of medium size, with white seeds, and have the smallest yield. The four varieties of *til* grown in this district are as follows:—(1) *Krishna til*, i.e., black *til*, and (2) *Sanki*, or white, *til*, both of which are sown in jungle land in June and July, and gathered in November and December. (3) *Khasla til* is sown in sugarcane fields in March and April, and cut in June. (4) *Bhādo til* is sown on jungle land in May and June and cut in August and September.

Fibres. The fibre crops of the district consist of jute and hemp (*san*) sown on high land in May and June and cut in August and September.

Sugarcane is grown in moist lands and on river banks, and is ^{other} chiefly cultivated in the Ghātāl subdivision and in the Sābang ^{crops.} thāna of the head-quarters subdivision.

Tobacco, turmeric and market garden produce are raised in small quantities on homestead land. The cultivation of indigo was formerly carried on, chiefly by Messrs. Watson & Co., the plant being grown on high lands on the banks of rivers. The price of the dye has fallen so low that it no longer pays to cultivate it.

Pān or betel-leaf is grown on black clayish soil in gardens ^{Miscellaneous} called *baraj*. A plot of land situated on high well-drained ^{neons} ground, and close to a pond or *khāl*, is selected for the garden. *Pān*. The land is turned over thoroughly to a depth of 18 inches, trenches are dug around the plot, and the earth dug up from them is spread over it; a roof is made of bamboos and jute stalks supported on bamboo posts, and the four sides of the *baraj* are then enclosed by *tattis* made of the same material as the roof. Bamboo uprights are placed in parallel lines within the garden, and *pān* cuttings are planted between them. When the plants grow, they are trained over the uprights. Sowing generally takes place in June, and the leaves are plucked in July and August of the following year.

Mulberry is grown to some extent, more particularly in the ^{Malberry.} Ghātāl and Tamluk subdivisions. For the purpose of planting mulberry cuttings, the land is dug to a depth of about 18 inches with the *kodātī*. The large clods are broken up, after which the field is ploughed twice and levelled. When the land has been well prepared, holes are made 18 inches apart, in each of which one to three cuttings are placed. They are then covered with earth and watered from a *kalsi*, the waterings being repeated until the cuttings take root. When the plants are about 18 inches high, the whole field is flooded, and after a week the earth that was raised in making the holes is spread round the plants. Mulberry is planted in September and October, and the leaves are gathered in May and June.

The cultivators do not follow any regular system of rotation of ^{ROTATION} crops. In the case of *kāla*, or twice-cropped, land, after the *dus*, or ^{OF CROPS.} autumn, rice has been harvested, a second crop of pulses or oil-seeds is cultivated in the cold weather. Sugarcane is a special crop requiring a full year to ripen and is grown only at intervals of three or four years.

The canal-irrigated and flooded tracts do not require manure, ^{MANURES.} as the silt brought down by the water fertilizes the soil. Elsewhere manure is in general use for preventing the exhaustion of

the land. The manures generally used are cow-dung and pond-mud, and sometimes ashes. Every ryot has his dung heap close to the cowshed, a piece of low ground being selected, or a hole made, for the collection of dung, ashes, waste straw, vegetable refuse—in fact, everything that in the opinion of the ryot has the least manurial value. Cow-dung is collected in the dung heap from June to March. In April and May it is carried to the field either in carts or on pack-bullocks, and sometimes in bags or baskets. It is first put in heaps at regular intervals and is then spread over the fields either by hand or by means of the *kodali*.

Pond-mud is considered a very valuable manure, and is most commonly applied to sugarcane, betel and mulberry. To obtain the best results it is necessary to apply it in very large quantities. A good dressing would be forty cart-loads per *bigha*. The beneficial effects of pond-mud last for three years and manifest themselves most in the second year. Pond-mud is most extensively applied in a year of drought when the ponds dry up. Ashes are also sometimes used as manure in this district. They are generally mixed with cow-dung, but are occasionally used alone for onion fields and nurseries.

EXTEN- SION OF CULTI- VATION.

In 1874 it was estimated that the area of rice-growing lands had increased by about 50 per cent. during the previous twenty years. There is little doubt that since then there has been a further large increase; but most of the district being permanently-settled, accurate data of the extension of cultivation do not exist. It is, however, known that a considerable area has been reclaimed from jungle in the north and west during the last thirty years, while the *jalpai* lands, i.e., lands which formerly supplied fuel for the manufacture of salt, have been brought under the plough in the south. In the alluvial tract there is but little space for further extension of cultivation; only a few patches of waste land are met with here and there, and the lands under cultivation are not allowed to lie fallow for any long period. In the south there are some waste sandy lands, and in the north and west there is a considerable area not yet brought under the plough. Much of the latter is covered with scrub jungle, but some of it is well suited for cultivation, and the work of reclamation is in progress. The statistics for 1907-08 show that the net cropped area was 1,914,300 acres, while culturable waste accounted for 439,020 acres, and the area not available for cultivation was 965,720 acres.

CATTLE.

The cattle of the district are of the degenerate species usually met with in the plains of Bengal, and it is to be feared that there is little chance of any general improvement because the pasture

lands in the alluvial tract are being encroached upon with the extension of cultivation, and also, it may be, because the practice of dedicating Brāhmaṇi bulls and turning them loose is growing less common. Owing to the shrinkage of pasture lands, cattle are now grazed in the fallow fields, on the slopes of embankments, and on any waste lands there may be. Bullocks while employed on work are fed on straw, oil-cake, etc., but it is evident that a great many do not get sufficient food in the dry months of the year.

Attempts have been made at the head-quarters station, with some success, to improve the local breed of cattle by importing cows from Bihār and bulls from Hissar. Buffaloes are common in the south of the district, where there were formerly wild animals of this species; they are mostly kept for milk. Many villages contain a few sheep, while goats are found almost everywhere. There are few ponies, and such as there are, are of the diminutive kind common in Bengal.

CHAPTER VI

—
NATURAL CALAMITIES.

FAMINES. THE district is not specially liable to famines. Droughts are not of frequent occurrence, nor, when they do take place, are they usually of so severe a character as to cause a general destruction of the crops. Much depends on the quantity and distribution of the rainfall and the situation of the lands under cultivation. Part of the district being high and undulating, and part flat and low-lying, most estates are liable to suffer to some extent from the vicissitudes of the seasons. If the monsoon sets in early with very heavy rain, the crops on the lower lands cannot be grown at all or are damaged by submersion, while, if it sets in late or ceases prematurely, the crops on the high sites suffer from drought. When, however, the rain falls in moderate quantity throughout the season, the crops of all parts are good and an abundant harvest is the result.

There have been five famines or periods of scarcity during the time of British administration, viz., in 1766, 1792, 1851, 1866 and 1897. Of the first three there is little record; in 1851 there was a loss of nearly five-eighths of the rice harvest, which is the main crop of the district. The worst famine, of which there is detailed information, was that of 1866, the great Orissa famine, from which Midnapore suffered more than any district in Bengal outside Orissa.

Famine of 1866. In 1864 a large area had been desolated by a cyclone and storm-wave, which will be described later in this chapter. Nearly three-fourths of the population of the Doro and Gumgarh *parganas* had been swept away. In September 1864 it was reported that a fourth of the former *pargana* was lying waste for want of men to cultivate it, while in Hijili, which had suffered most severely from the cyclone, the ryots were suffering from want of grain. The rains of 1865 ceased unusually early, no rainfall of any consequence occurring later than the 15th September; and as time wore on, and the drought still continued, the aspect of affairs became very grave. On the 18th October it was reported that in Hijili one-fourth of the rice crop had already perished, and

that if no rain fell soon, there would be a famine, "the like of which had not been seen or heard of for many years." It was not that rice was absolutely wanting, for large quantities were being imported from the Balasore district, and it was also being brought in to Hijili from the central parts of Midnapore. But the price, which ranged from 12 to 16 seers per rupee, was quite beyond the means of the poorer classes in this part of the district.

In December a certain amount of relief was obtained from the harvesting of the rice crop, but this had been reduced by the drought to only half the average. Prices soon rapidly rose again, distress deepened, and there was a serious outbreak of violent crime caused by want. In April, the old and infirm were beginning to die from insufficient food, and relief works became necessary. By the end of June, 18 relief depôts had been opened, but, in spite of this, deaths from starvation were occurring, particularly in the neighbourhood of Dantan and in the jungle tracts. At the beginning of July 1866, rice sold in Midnapore town at $6\frac{1}{2}$ seers for the rupee; and in the Jungle Mahâls, though it sold nominally at 7 seers per rupee, it was not procurable in many places, and the police frequently reported that they could not obtain enough for even their own use. The general opinion at this time seems to have been that there was plenty of grain in the district, but that the *mahajans*, or rice merchants, would not part with it except at exorbitant prices. Whether this was really the case or not, it became clear that importation of rice on a considerable scale must be undertaken if the depôts already established were to be kept at work.

The famine reached its height in the months of August and September. The Board of Revenue, despite its previous resolution not to import food, was now forced to take action and despatched a steamer to Rangoon for rice to the value of Rs. 30,000. By the 1st October the rice was being imported into Midnapore, and the stock thus received was considered to be more than sufficient to last out the famine. From the beginning of October the distress began to abate rapidly with the promise of an abundant harvest. When the crop came in, there was cheapness and plenty, and relief operations were brought to a close by the end of November. No accurate statistics of the mortality are available, but the Collector estimated that in the western part of the district from ten to fifteen per cent. of the population died of starvation and diseases induced by it, and that in the central portion and the Contai subdivision from two to three per cent., and in Tamlük a half per cent. perished.

The total number of relief centres and sub-depôts established from first to last was twenty-three. The first was opened at Gopiballabhpur on the 19th May; the last was opened at Jambani on the 26th August. Besides those on works, the number of paupers relieved daily from June to November averaged 5,780. The funds raised for the relief of distress consisted of Rs. 77,350 contributed by the Board of Revenue and the Calcutta Famine Relief Committee, and Rs. 23,735 obtained from subscriptions. Besides this, 10,469 owt. of rice were supplied to the district at a cost of Rs. 53,034, which, deducting the sum of Rs. 7,114 realized from sales of rice, gives a total of Rs. 1,47,004 spent in affording relief to the starving population. This, however, is exclusive of money expended on public works for the purpose of providing labour for the poor. The sum of Rs. 73,736 was placed at the disposal of the Magistrate for the employment of labour on works, of which Rs. 43,128 were expended up to the end of November 1866. Also Rs. 1,68,195 were placed at the disposal of the officers of the Public Works Department for ordinary and special works, of which Rs. 1,04,593 were returned as expended.

The Famine Commissioners summed up the results of their inquiry into the distress in Midnapore in the following words:— “It is clear that the nature and degree of the distress were not known, and operations were not commenced sufficiently early. Comparatively large as was the relief at last afforded, the Collector does not think that at best it reached half the starving population, and there was unhappily a large mortality estimated about 50,000, or about one-tenth of the whole population of the tracts seriously afflicted. But in some of the more remote parts the mortality was, it is to be feared, larger than this proportion. Mr. Terry’s statement seems to show that in some parts the labouring population died in larger proportion; and it is stated that in one jungly tract the population of stone-masons and iron-smelters almost entirely disappeared. Late in the season rice was imported by the Board of Revenue, but it was too late.”

**Famine of
1897.** In the famine of 1897 only a small tract was affected, viz., a portion of the Binpur thana, about 100 square miles in area, with a population of 25,000, situated between 30 and 40 miles west of Midnapore station. This part of the country is hilly and jungly, and is inhabited mostly by Santals. Here the beggar class and the dependants of labourers were in a state of destitution for several months rendering gratuitous relief necessary. It was not found necessary to organize relief works properly so called, but work was afforded to able-bodied labourers on six district

roads in or near the tract affected. Gratuitous relief to the amount of Rs. 1,289 was distributed. It was administered by officers in charge of the five relief circles into which the tract was divided. The daily average for eight weeks of persons in receipt of relief was 1,216 or 4·86 of the total population of the affected tract.

The district is particularly liable to floods from the streams *Floods.* and rivers, which flow down from the hills of the neighbouring districts. If there is a very heavy fall of rain on these hills, the rivers overflow the embankments and cause considerable loss of property. The mouths of the rivers, moreover, are insufficient to discharge the excess water, and consequently many miles of country remain submerged for weeks after a flood.

The records of the district show that disastrous floods frequently swept across large areas during the first half of the nineteenth century. In May 1823 a flood destroyed the whole line of embankments, and the water rose so high that it entered the Collector's Court at Contai and washed away the records. The sea water afterwards found its way through the broken dykes and seriously injured the arable land. A second flood occurred in 1831, when the embankments were again washed away, and the rice, which was well advanced, was almost totally destroyed. A full enquiry into the losses sustained was made by Mr. Collector Wyatt, and the Government, in consequence, granted remissions of revenue to the extent of Rs. 85,678. In October of the following year a second destructive flood occurred, which did great damage to the ripening crops and overtopped embankments 15 feet in height. An investigation into the losses sustained by the cultivators made it necessary for Government to allow further remissions of revenue to the extent of Rs. 81,691. A still more serious flood in May 1833 entirely destroyed what remained of the embankments. A fourth great inundation—the fourth in the space of three years—followed in September 1834, during which more than half the crops were swept away, 7,112 persons or half the population of the flooded tract were drowned, and 865 villages inundated. A careful investigation resulted in Government granting the sufferers remissions of revenue amounting to Rs. 6,28,789 and suspensions to the extent of Rs. 4,97,732. A letter from the Board of Revenue to Government, dated the 9th May 1837, declared that—"These calamities were of no light or common kind, and their consequences were of no transient or temporary character. The agriculturists had not to suffer merely the occasional losses of an unprosperous season and a bad harvest, to be repaid by succeeding years of fertility and abundance. They

were overwhelmed in two successive years by tremendous visitations of Providence. By the first of these, more than half of the crops were swept away, more than half the population was destroyed, and the fertility of the soil was almost annihilated. Yet this was not the whole calamity. Hardly had a year elapsed before a second destruction took place."

Other floods occurred in January 1839 and May 1840, in the latter of which, although the sea embankments stood very well, the country suffered by the bursting of the land embankments. No remissions or suspensions of revenue, however, were considered necessary. Again, in August 1845, floods did severe damage to the Kalmijol and Midnapore Embankments; the *parganas* of Mainachaura, Sâbang and Kâsijorâ were inundated, and the rice crop injured. In October 1848, a flood did much damage to the embankments, which were overtopped and breached in many places. The crops also suffered and, after an investigation by the Collector, remissions were granted to the extent of Rs. 10,818, and suspensions to the extent of Rs. 1,42,797. In April 1850, another inundation overtapped and breached the embankments in the sea-board *parganas*, and along the banks of the large rivers. Fortunately, no crops were on the ground, except indigo, and no remissions or suspensions of revenue were considered necessary.

Floods of 1888. Among more recent floods those of 1888 may be especially mentioned both on account of their wide-spread extent and also because they led to the appointment of a special Committee to enquire into the origin of floods in Midnapore with a view to the adoption of remedial measures: this enquiry will be referred to in the next chapter.

The floods of 1888, which were due to abnormal rainfall, inundated the greater portion of the low-lying lands in the district. To the extreme north, the Ghâtal subdivision suffered from a simultaneous rise of the Kâsai, Silai, and Dwârakeswar rivers. In the Midnapore subdivision almost the whole country was submerged owing to a flood in the Kaliaghâi river, which was the highest on record. Parts of the Tamluk subdivision also suffered severely, and the central part of the Contai subdivision was under water till the end of December. The damage was, however, compensated by a bumper crop of *boro* paddy, which was grown more widely than usual. Eventually, the only relief measure which it was found necessary to undertake was the gratuitous distribution of food to some destitute persons in the Contai subdivision, who in ordinary years would have subsisted on their neighbours' charity.

Being situated at the north-west angle of the Bay of Bengal ~~Crolowea~~, the district is liable to cyclonic storms, which are often accompanied by heavy rainfall and sometimes by storm-waves. Storms, all causing more or less damage to life and property, are reported to have occurred in 1831, 1832, 1833, 1840, 1848, 1850, 1851, 1876, 1885, and 1901, but none of these are comparable to the cyclones of 1864, 1867 and 1874.

The cyclone of 1864 burst on the 5th October and was of ^{Cyclone of} 1864 unprecedented violence. It had its origin in the vicinity of the Andaman Islands, and, travelling northwards and westwards, first struck Bengal on the Balasore and Midnapore coast. In the southern and eastern parts of this district, lying on the sea board, and exposed to the full force of the storm-wave, the effect was most disastrous. Colonel Short, in a report on Southern Hijili, stated:—"The fury of the cyclone caused a fearful destruction in the villages to the interior; indeed, the raised plateaux on which many stood were swept clean. It appears that the people, believing the lull in the storm to be the sign of its having passed over, proceeded to bring in their cattle, and whilst so engaged they were overtaken by the waters, which, topping the lowest part of the dyke or entering through the breaches, drowned man and beast; while many, standing on the high ridges separating the fields, were, during the height of the cyclone, literally swept into the water and drowned."

The height of the storm-wave varied. On the southern coast it nowhere attained any extraordinary height, and it did not to any appreciable extent breach the sea face of the great dyke of Hijili. The wide mouth of the Rasulpur river, however, was afforded an entrance to the water, and, although its principal creeks are all embanked, a large area behind Contai was flooded. As the wave was forced up the narrowing estuary of the Hooghly, its height and force increased. At Cowoolly the wave came in two hours before high tide, and rose 16' 48 feet above high-spring level, and 6 feet 4 inches above the top of the embankment, sweeping over the country within, and carrying away everything in its path. Higher up the river, at the mouth of the Haldi, the height of the wave was 10 feet above spring-tide level, and it overtopped the embankment for several feet along a length of 18 miles. At Tamlük, the water poured in irresistible volume over the embankment, which it topped to a depth of 8½ feet, sweeping away a row of masonry houses inside, and scooping out the foundations. At exposed points, the first intimation the people had of the inundation was their being carried away by the wave. At Kola Ghāt, it entered the Kola Khal in a vast mass,

sweeping along parallel to the metalled road, and topping it for several miles up. The height of the inundation decreased gradually towards the interior, and the flood did not extend beyond Siddhā, an inland village of *pargana* Kāsijorā. From the mouth of the Rūpnārāyan, the inundation was more extensive and generally more severe, as the waters from the estuary of the Hooghly swept over the low-lying promontory of Doro Dumnān and Mahishādal, and up the wide channels of the Haldi and Kasulpur rivers.

The loss of life and property was very great. In the low-lying lands of Gumgarh, for example, it was estimated at three-fourths of the total population. In Bahrimuthā, terrible destruction spread over an area of 56 square miles, the devastation being greater here than elsewhere, as the villages were larger, more numerous, and more thickly populated. Excluding tracts from which no returns of loss of life were received, the ascertained deaths caused by the cyclone in this district were 33,000. The number drowned or killed in the storm, however, by no means represented the total loss of life caused by the cyclone. The immediate losses were equalled, if not exceeded, by the deaths caused by the famine and the pestilence, cholera, dysentery and small-pox which succeeded the inundation. The prompt steps taken by Government and its local officers, the Calcutta public, and many private persons, in sending supplies of food and clothing, alleviated the pressure of famine after a few days. But putrid vegetation and unburied bodies and carcasses for many weeks lay strewn over the country, and the consumption of bad food and impure water were evils less easy to deal with, especially as the prejudices of the Hindu population against touching a dead body were so strong as to be proof even against the dictates of self-preservation.

These fertile causes of disease acted on a people already suffering severe mental prostration from the loss of their relations and property, and proved more fatal than the deluge which had first overwhelmed them. Mr. Montresor, the Commissioner of the Division, reported that "almost entire villages have been depopulated from those awful scourges, cholera and small-pox." The Superintendent of Kaukhali (Cowoolly) lighthouse, in a letter dated 7th December, stated that "the unfortunate inhabitants are dying by scores every day, from a disease very similar to cholera brought on by using the water of this place. Every tank, pond and well is stagnant with decaying matter, both animal and vegetable, besides containing a large admixture of salt water. I cannot accurately state the loss of life, but I am afraid the

fatal malady has carried off more than the cyclone. There is utter desolation everywhere. Scarcely a human being is to be seen. The paddy, now ripe, is left in the fields for the cattle to destroy. When I asked any one the reason of this, the answer always was, "Who is to eat it?"

Assuming the mortality by sickness to have been equal to that caused by storm and flood, 66,000 deaths must be attributed to this terrible disaster, exclusive of the tracts not specially reported upon. The loss of crops in the inundated tracts was not so serious as might have been expected. Happily the water drained off from a great portion of the land very quickly, and the deposit of salt did not destroy the rice. The land was soaked with fresh water at the time the storm-wave broke over it, and was therefore less liable to be impregnated by saline deposits than it would have been during the dry season. It was officially stated that, had the cyclone occurred in March or April, the productive powers of the land would have been destroyed for the next three years. Even as it was, in parts where the water did not at once drain off, the crops were greatly injured, one-fourth in the district as a whole being destroyed. The loss of private property, in the shape of cattle and houses, was very severe. The loss of cattle is estimated to have been three or four times that of human life. With regard to houses, it is reported that in Tamluk, out of 1,400 only 27 remained standing after the storm. This locality lay in the centre of the cyclone, and had to endure the climax of the gale. At many other places, however, an equal proportion of houses was destroyed. Government also suffered serious loss by damage to the embankments, by numerous large salt stores being blown down, and their contents washed away, by the destruction of public buildings, and lastly, by the remissions of revenue which it was necessary to make to the landholders in the inundated tracts. The north and west of the district were not much affected by the cyclone, and its effects were hardly felt west of Midnapore town.

The violent cyclone which occurred on 15th-16th October ^{of 1867.} Cyclone 1867 selected this district as one of the principal scenes of its devastation. A storm-wave came ashore not far from Contai, and the storm travelled with the usual rotatory motion from south-west to north-east across the district. The diameter of the storm was about 20 miles, and the whole country coming under its influence was wrecked, its intensity in this area exceeding that of the cyclone of 1864. The station of Midnapore was severely damaged, and the loss of life in the town was great. In the whole district the deaths amounted to 3,049, while 17,500

cattle perished. From Midnapore the storm passed over Ghātāl and Arambāgh to Burdwān.

Cyclone of 1874. After this there was a respite up to 1874. In the meantime, not only had the sea-dyke been completed, but all the great khāls leading into it had been sluiced. Were it not that, unfortunately, the Pichabani sluice was at the time under repair and a side channel consequently left open, the whole line from Birkul to the mouth of the Rasūlpur would have been completely guarded. In this cyclone the violence of the wind undoubtedly surpassed that of 1864. The two-storied house at Contai was wrecked, and a storm-wave, apparently higher than that of 1864, burst with full violence nearly on the centre of the sea-dyke. The state of the dyke afterwards showed that it must have been overtopped by the wash of the tide, and the sea must have stood for some time 1·5 feet below crest level; but both the sluices of the dyke and the dyke itself escaped with trifling injury. Thus, the wave rose 13·5 feet over high-spring flood level or 2 feet higher than in 1864; and the mere fact of keeping out such a storm-wave would have been an engineering triumph had it not been for the open Pichabani Khāl with its side embankments at only the old level. Up this opening the wave travelled with terrible effect. It both breached and overtapped the low section embankments and, taking the sea-dyke in flank and rear, inundated a large portion of the country which that work had protected in front. The storm fortunately spent its violence to the west of the Hooghly, and no wave of any dimensions went up that river or its tributaries. Some damage was done to the country east of the Rasūlpur, but the injury from salt water was not to be compared with that caused in 1864.

CHAPTER VII.

CANALS, DRAINAGE AND EMBANKMENTS.

The canals of the district are (1) the Midnapore canal, which CANALS. takes off from the river Kāsai near the town of Midnapore, and extends eastward to the Hooghly at Uluberia; (2) the Hijili tidal canal extending from the Hooghly at Geonkhāli to the Rasūlpur river; and (3) a portion of the Orissa coast canal extending from the Hijili tidal canal into Balasore. The first is used both for navigation and irrigation, and the other two, which are connected by the canalized Sarpaī river, for navigation only.

The construction of the Midnapore canal was begun by the Midnapore East India Irrigation and Canal Company in 1866; the works Canal. were taken over by Government two years later, and irrigation commenced in 1871. The canal originally formed part of the Orissa canal scheme, i.e., it was intended to have a high level canal providing a navigable trade route between Cuttack and Calcutta; but the Midnapore canal was at an early stage separated and treated as a distinct project. The water-supply is derived from the Kāsai river at Midnapore, where there is a regulating weir with head-works, and the canal extends to Uluberia on the Hooghly, crossing the Rūpnārāyan and Dāmodar rivers.

The main canal consists of four sections. The first has its head at Midnapore, where the river Kāsai is spanned by a weir. and terminates in the same river at Pānskura; its length is 25 miles. The second extends from Pānskura, where there is also a weir, to Daiuan on the Rūpnārāyan; its length is nearly 12 miles. The third section extends from Kantapukhur on the Rūpnārāyan to Kaltapārā on the Dāmodar river, and the fourth connects the Dāmodar with the Hooghly; but these two last sections are in the Howrah district. The total length of the canal is 49 miles, and of the navigation from Midnapore to the Hooghly, including the intermediate rivers, 53 miles. There is also a branch canal, 16½ miles long, running to near Nārāyangārh on the railway, which was made navigable because it was

originally intended to carry the canal on to Balasore, some 60 miles beyond Nārāyaṇgarh. The total navigable length is thus 69½ miles; while the distributaries have a total length of 267 miles, the village channels of 30 miles and the drainage channels of 54½ miles.

About seven-eighths of the irrigation from this system is effected from the first section of the canal, viz., from Midnapore to Pānskura on the Kāsai (25 miles), while the second, from Pānskura to Dainan on the Rūpnārāyan, irrigates about 9,000 acres. The greater portion of the country irrigated from the former section is non-deltaic, and there irrigation is highly beneficial in almost all years. The country below Pānskura is chiefly deltaic, the lands are often water-logged, and it is only in dry years that irrigation is required. As regards the benefit obtained by the use of the canal water, even in years of sufficient and well distributed rainfall, the yield is higher than that from fields which are not so irrigated, and the cost of cultivation in canal-irrigated lands is less than that of non-irrigated fields. In the first place, less manure is required, and secondly, the expense of weeding is much less. The saving under the second head is considerable, for the canal water destroys weeds rapidly, so that one labourer will be enough for weeding a canal-irrigated field, which, if unirrigated, would have required three men. There is practically no difference in the rates of rent for irrigated and unirrigated lands of the same quality, the cultivators paying the same rate for adjoining areas, even though only one gets canal water.

The irrigation is almost all carried on under a system of long leases (for seven years). The rate for such leases was Re. 1-8 an acre from 1873 till 1905, when it was raised to Rs. 2 an acre, the rate for single waterings being at the same time increased from 8 annas to Re. 1. The autumn and cold weather rice crops occupy almost the whole of the cultivable area commanded by the canal; the little that is under sugarcane or mulberry being usually on high ground above canal level. There is little or no rabi irrigation, and, though some spring (*boro*) rice is occasionally grown with the help of canal water when the winter crop has failed, the amount is too variable and, at the best, too small to be taken into account. Thus, the irrigation may be said to be wholly dependent upon the *khari*' demand, and this varies with the rainfall. In years of seasonable rainfall there is a good supply of water in the Kāsai, so that there is not a very large demand for *khari* irrigation. In years of exceptional drought the demand is limited only by the supply, and the profits are

great; in 1873, for example, the Collector reported that it was a common saying among the cultivators that the profits from the irrigation of a *bigha* of rice would purchase a *bigha* of *lakhraj*. In very dry years, however, great economy in supplying water has to be practised; for instance, in 1898 and 1907, two exceptionally dry years, some land which it was most inconvenient to irrigate, had to go without any supply.

There is, moreover, uncertainty in the supply of the river at different times of the year. In consequence of the small size of the catchment area, the supply fails in October when it is most wanted. In the earlier part of the season the rainfall is usually ample, but there is little need of canal water. Thus, in Midnapore, canal irrigation labours under a double disadvantage. In years of heavy rainfall it is little wanted, and in years of extreme drought, when it is of the utmost value, the water-supply partially fails. The Kāssai water is nevertheless much esteemed by the ryots for the large quantity of rich silt which it carries, and this is a powerful recommendation in its favour in all years.

The total cultivable area commanded by the canal in the district is 123,200 acres distributed as follows:—(1) under the Midnapore weir 98,000 acres; and (2) under the Panskura weir 25,200 acres. The actual area annually irrigable is 71,000 and 9,000 acres respectively, the maximum area irrigable under

Triennium ending.	Acres.
1901-02	78,190
1904-05	88,044
1907-08	65,783

long leases being fixed at 80,000 acres in 1904. The marginal table gives statistics of the area irrigated, the acreage shown being the annual average in each

case. The area has been decreasing since 1903-04 partly owing to an increase of the water-rate from April 1905.

Before the opening of the Bengal-Nāgpur Railway the canal formed part of the main route between Calcutta and Midnapore, but the railway has diverted the traffic and caused a falling off in the receipts from navigation. With the object of encouraging navigation the rates of toll were reduced by half from June 1906, and the traffic has since increased.

The Hijili tidal canal extends from Geonkhali near the junction of the Rāpuṇārāyan and Hooghly rivers to the Haldi river, and thence to the Rasūlpur river at Kālinagar, a length of 29 miles. It is a tidal canal, with two reaches, each looked at either end. The first range, which takes off from Geonkhali and terminates at Etamogra on the left bank of the Haldi river, is nearly 11 miles in length. The second range, which is 17 mil-

long, connects the Haldi and Rasūlpur rivers, commencing at Terapakhia on the right bank of the former and terminating at Kalinagar on the left bank of the latter river. There are four locks, viz., Geonkhāli, Etamogra, Terapakhia and Kalinagar. The canal is used solely for navigation. The traffic fell off considerably after the opening of the railway, and the regular service of steamers had consequently to be stopped, but it is now improving. This canal is used chiefly as a channel by which the southern part of the Midnapore district exports its surplus rice to Calcutta, receiving in return piece-goods, salt, and other imports. This canal was begun in 1868 and completed in 1873.

Orissa
Coast
Canal

The Orissa Coast Canal, of which 36 miles (known as Range III) lie in this district, begins at Baitgarh on the right bank of the Rasūlpur river, where it connects with the Hijili canal, and runs through Balasore, where it terminates on the Matai river. It is practically a continuation of the Hijili canal, and like it is used only for navigation. Work was begun in 1880, and the canal was opened to traffic in 1886.

DRAIN-
AGE.

A considerable area is water-logged, especially in the east and south of the district. This is largely the result of embankments, constructed along the margin of silt-bearing rivers or tidal estuaries, which have caused an alteration in the comparative levels of the country. These embankments date back many centuries, and appear to have been at first isolated lengths, of no systematic alignment or section, constructed by zamindars to protect individual holdings or local depressions. By degrees, certain lengths were connected, and there came to be a regular system of embankments either constructed in lines along one or both sides of a river or forming a "circuit" in the fork between the branches of a river or tidal creek—a "circuit," it may be explained, is an area of cultivated land encircled with embankments to keep out floods. Eventually, more or less continuous lines were taken over by Government, which engaged, on certain conditions, to complete them and maintain them up to a certain standard.

When these embankments were first brought to such a state of efficiency as practically to exclude the flood or tidal water, the drainage of the protected area was easily arranged for by sluices in the embankments at the sides of natural minor drainage lines, as the general level of the land was, of course, the same on both sides of the embankment. With the lapse of time, however, the action of the silt-laden rivers spilling over their banks when in flood, and to a still greater degree the action of the influx and efflux of tidal water also heavily laden with silt, has gradually

but steadily, raised the marginal lands between the embankments and the channels, as well as the beds of the channels themselves, at any rate of those within tidal influence. The original uniformity of level has consequently disappeared, and the protected lands are almost everywhere, though in varying degrees, lower than formerly. The difference of level is now, in some instances so great, that much difficulty is experienced in arranging for their drainage at all.

A further result of embanking both sides of the rivers has been a gradual contraction of the waterway until, at length, the lower reaches are unable to carry the water brought down in floods from above. This leads to frequent breaches of the embankments and flooding of the country, which is often more serious locally than if there had been no embankment at all. On the other hand, where the embankments have been effective, the country has been deprived of the beneficial action of the silt-laden water, though protected from its temporary and local destructive action. To remedy this state of affairs, various drainage projects have been undertaken in the water-logged areas, such as the cutting of channels, the deepening of rivers and *khals*, and the provision of sluices in embankments. The drainage of the tract which lies in the Contai subdivision between the Haldi and the Subarnarekha rivers is a particularly difficult problem. Numerous suggestions have been put forward and opposed, the arguments on either side affording striking illustration of the conflict between the desire to reclaim tidal lands for cultivation and the desire to avoid the injury to drainage channels which the loss of the tidal spill basins, due to reclamation, must inevitably cause.

The most important scheme undertaken during recent years is the drainage of the Argoal circuit, a tract of land, extending over nearly 28 square miles, lying in the fork between the Sadar and Bagda khals in the Contai subdivision. This area is enclosed by an embankment, the lands outside which have been raised by deposits of silts to a much higher level than the interior lands. The lower lands are water-logged even in ordinary years, and when the embankment breaches, as it does occasionally, the enclosed lands are devastated and the homesteads flooded. A scheme for the drainage of this tract, at an estimated cost of Rs. 1,58,000, was therefore prepared, the arrangement being that the cost should be advanced by Government and then apportioned between it and the zamindars benefited by the work. It has now been practically completed and will, it is hoped, improve materially the conditions of this water-logged tract.

**Drainage
Committee's
enquiry.**

In 1889 a special Committee was appointed to enquire into the drainage of the area affected by the Hijili tidal and Orissa coast canals and other flooded tracts in the Jalamutha, Majnamutha and Burdwān estates—all included in the country within the basins of the Rasūlpur and Haldi rivers and their affluents. The Committee found that inundation was due to four distinct causes, viz., (1) incursions of the sea, (2) the overflow of the Subarnarekha, (3) the high floods of the Kāliaghāi river and the breaching of the Amarsi embankment, and (4) the accumulation of water over the country owing to excessive rainfall. Remedial measures had been undertaken, or proposed, for the first three. As regards the fourth, with which the Committee were required to deal, they were of opinion that the cause of accumulation was undoubtedly the silted state of the river Rasūlpur and the obstructed state of the drainage channels leading into it, i.e., the Bagda river and the Sardar, or Maidakhali, Khāl. These streams are the natural main drainage outlets of the country to the west and north-west of Kaliengar, an area of some 280 square miles; but unfortunately for their efficiency as drainage channels, they had rapidly silted up owing to the reclamation of what are known as the *jalpai* lands, which had been going on for the last twenty years.

The *jalpai* lands, it may be explained, were lands which, being exposed to the overflow of tidal water, were strongly impregnated with saline matter. The manufacture of salt being a Government monopoly, they were long held under the direct management of Government for the supply of fuel and the manufacture of salt. After the abolition of the monopoly, they were gradually reclaimed and brought under cultivation, embankments being built in order to exclude salt water from them. The result was a rapid deterioration of the drainage channels. Formerly, when no obstruction of the flood tide existed, the silt-laden water of the Rasūlpur, finding its way up at high tide, spread over the *jalpai* lands, which, being covered with jungle, were calculated to facilitate such a deposit. When, however, the lands were embanked, the silt-laden water was forced into the drainage channels, which, having no fresh water streams discharging into them, quickly silted up. The resultant state of things may be realized from a resolution of the Public Works Department, dated 6th December 1888, in which the tracts round Tontai and Tamlük were described as follows:—"The drainage is blocked over some three or four hundred square miles, and crops injured or destroyed over about one hundred square miles." The causes of the obstruction were examined by Mr. Vertannes last year, and shown to be

of comparatively recent origin. It was shown that the silting of the tidal creeks—notably the Bagda and Maidakhali Khals, which unite to form the Rasulpur river at Kalinagar—was due to the excessive land reclamations which have been carried out during the last fifteen years. These creeks for seven or eight months of the year discharge little or no natural drainage ; but so long as the low country lying about them was, comparatively speaking, unembanked, the flood tides swept freely over it ; while, with the turn of the ebb, these accumulated waters were poured back into the channels with redoubled force, and so scourred them out. By this simple process the creeks were maintained by nature in an efficient state to discharge the drainage of the monsoon. During recent years, however, the large tidal basin has been embanked and reclaimed. The consequence is that the tidal waves are headed back by the embankment, and deposit their silt in the bed of the creeks, which are rapidly rising above the level of the country which they formerly drained. Thus, after heavy rainfall, not only is the whole of the reclaimed country thrown out of cultivation, but the drainage of the more inland tracts is blocked, and their crops also are damaged and destroyed."

The Committee found that the other chief cause of obstructed drainage was the construction of cross-dams in the main drainage channels for the purpose of excluding salt water from the lands above them. The danger of these cross-dams arises from the fact that they cause a deposit of silt at or near them. As one cross-dam is built below another, the silt gradually raises the bed of the stream, and consequently affects the level at which water flows off throughout the whole country served by the channel. The danger is intensified when embankments are also constructed along the margin of the channel and the area of the channel is contracted. Every condition thus exists for favouring the rapid silting up of the bed and blocking the drainage of the country above.

As regards this latter conclusion, Colonel J. M. McNeile, Chief Engineer of Bengal, wrote in 1890 :—" Such cross-dams were only possible in the main drainage channels, when they had already silted up to a considerable extent. The embankments, in one form or another, are responsible for the whole difficulty in which we are placed. The old, inner, and now abandoned embankments were constructed to reclaim salt swamps, and immediately on their construction, silting was arrested on the reclaimed lands and accelerated outside. In the first instance the areas excluded were large, and though they were gradually

being raised, the body of tidal water returning off them to the main drainage channels or rivers was sufficient to keep both minor and major channels clear, though frequently some silt-clearing was required outside the sluices. Still there was sufficient fall for the water, and drainage was possible. When the *jalpaï* lands were further reclaimed by putting embankments close to the main channel banks, the body of tidal water passing up those channels was much reduced, and in receding had not power to clear out the silt from the beds of the channels, the consequence being the much more rapid silting of the smaller area left under tidal influence and of the main channels themselves."

The remedial measures proposed by the Committee were:—
(1) That cross-dams in the main arterial drainage channels should be removed, and the reconstruction of them should not be allowed, save where they were really required in order to protect cultivated land in the neighbourhood of those channels from inundation by salt water; (2) that the construction of embankments in *jalpaï* lands should be stopped, and, if possible, orders should be given for the removal of such embankments already constructed as interfered with the afflux of the tide over what was considered to be the necessary spill area; (3) that the Public Works Department should take charge of all the main arterial drainage channels and that they should be kept up at the expense of the zamindars and ryots concerned in the manner provided in Act II of 1882; (4) that certain obstructions to drainage caused by the Hijili tidal canal should be removed; (5) that certain engineering works should be taken up for the drainage of particular tracts.

The report of the Committee was reviewed in a Resolution of Government, dated 18th July 1890, in which it was stated:— "The report of the Committee indicates that severe floods, causing the greatest injury to crops, occurred in 1823, 1831, 1832, 1833, 1848 and 1850, a fact which indicates an original deficiency in the natural drainage of these basins, antecedent to the action taken within the last forty years. During that period Government has spent half a million sterling on embankments in Midnapore, four times as much as all the other landlords of that district. Moreover, a sea-dyke has been recently constructed in connection with the tidal canal, which has, according to the Committee, conferred enormous benefits on the landlords and tenants by protecting their lands from the numerous inundations of the sea to which they were formerly exposed. It is desirable, in considering the general bearing

of the report, to bear these facts in mind, as the Committee necessarily dwell mainly on the defects in the action of Government, giving less prominence to the natural agencies which produce flood in Midnapore and to the success with which in many places these have been counteracted."

In regard to the question of the effect of reclaiming the *jalpai* lands, it was said :—" It appears that both the engineer officers and the natives of the district attach more importance to the effect of embanking the *jalpai* lands than the Committee quite endorse ; but in the face of the facts and arguments adduced by the Executive Engineer, the Lieutenant-Governor cannot but accept the conclusion that embankments are primarily responsible for the entire difficulty. Cross-dams have doubtless done much harm and accelerated the deterioration of the drainage channels, but, until the main drainage channels had been very considerably silted up, cross-dams in them would not have been possible. It appears to be impossible to consider any portion, or even the whole, of the *jalpai* lands, 'as sufficient spill area,' at least as a permanent remedy for the existing evil, inasmuch as these lands are already much silted up and are already considerably higher than the protected lands which have to be drained ; but, as a remedial measure, the re-opening of these lands to tidal spill, and the absolute prohibition of any new embankment within their limits, will no doubt for a time put a check on the present rapidly increasing obstruction to the drainage of the country. From this point of view His Honour accepts the conclusions arrived at, and the Beard will be requested to make the necessary arrangements as soon as possible in communication with the Public Works Department of this Government."

As regards the cross-dams, it was said :—" No cross-dams should be allowed except temporary dams put by the Engineer in charge to allow of silt clearance above them, and the officer putting up such dam should be responsible for its complete removal at the earliest possible opportunity. All existing cross-dams, whether in major or minor drainage lines, should be removed. Hussea bunds" are almost equally objectionable as contracting the area over which the tidal water can spill, and even though the plea be to keep the tide off otherwise culturable land, no increase in their existing number or section should be permitted." With reference to the proposal to place the larger drainage channels under the control of the Public Works Department, it was

* The meaning of this term is explained later in the section dealing with the terminology of embankments.

pointed out that under the Embankment Act the Collector has a discretion in the initiation of proceedings to this effect.

EMBANKMENTS. In Midnapore, embankments on an extensive scale are required for protecting the coast line from the invasion of the sea, for preventing the inrush of salt water from tidal creeks, and for avoiding the submersion of low lands by the rivers overflowing their banks. The rivers, after leaving the higher lands and entering the alluvial soil, cease to serve as drainage channels, for their banks rise more and more above the cultivated plains the further they get from the hilly ground. In most cases, the river, having ceased to be a drainage channel, diminishes in volume as it approaches its mouth, while its bed rises in elevation. Embankments thus become, at any rate within the tidal area, an absolute necessity for the protection of the lands in the interior, which slope away from the rivers and form saucer-shaped hollows between them. The danger of salt water inundations is even greater than that of fresh water floods: it is said, for instance, in Hijili that a single overflow of salt water is fatal to three years' crops. Hence, in the littoral portion of the district it is not any sudden rush of water, as in the case of the Kasai, or any occasional inundations, but the ordinary gradual rise of each day's tides that has to be entirely excluded from all land set apart from agriculture. Briefly, it may be stated that, as in Holland, so in Midnapore, a great portion of the area is only rendered habitable by the sea dyke and the subordinate embankments which run along the tidal khals. "Great as the cost of these works has been, and as their maintenance is, it bears no proportion to the agricultural wealth or to the quantity of human and animal life which they protect from constantly recurring ruin."

Terminology.

The system of embankments and subsidiary works necessitated by the conditions above described go by the generic name of *pulbandhi*, which may be defined as the whole system of works necessary for the protection of agriculture in a country exposed to inundation. Various other terms are used for the different parts of this system (now simplified though not entirely superseded by the construction of sluices), which it will be convenient to mention before proceeding to the history of the embankments.

Ganguria bandh and *bahar-bhera bandh* are names given to the largest and most important embankments along the sea coast or along the tidal rivers and estuaries. These embankments have to be supplemented by others, for it is evident that the salt water of each tide would gain an entrance inland unless the

outer, or *ganguria*, embankments were continued along the *khals* which debouch into the main rivers. These continuations are called *hasia bandhs* and are divided into two classes, viz., those below, and those above, cross-dams. Owing to the practice of cutting the cross-dams during the rains, the former are fundamentally outer embankments and are almost as important as the *ganguria bandhs*, while the latter are for the greater part of the year inner embankments only.

Khilbandhi is the name given to the annual construction and cutting of cross-dams, i.e., embankments built across the beds of rivers. *Khalkundi* is the periodical excavation of *khals* to remove the accumulation of silt, the earth being generally utilized to repair the *hasias* on its banks. *Jalnikasi* is, in substance, the same as the above, except that it is applied to smaller drainage channels only. These drainage channels are an important feature in the agricultural system of Hijili owing to the practice of dividing the country into blocks by small inner circuit embankments, instead of into fields, as elsewhere, by means of *ais* or field ridges. Each of these blocks requires a *jalnikasi khali*, or drainage channel, to carry off the surplus water of the circuit, when the rainfall is excessive; while to prevent the same result following when the rainfall is not excessive, these channels usually have small *hasias* along their banks which can be cut through in a few minutes if necessary.

Bherabandhi and *bheribandhi* are names applied to the system of interior embankments which it remains to describe. The term *bherabandhi* is applied to large embankments of this class, while *bheribandhi* is a generic name for all the smaller interior embankments. The latter are mainly of three classes: (1) *Jalnikasi hasias* or parallel embankments intended to prevent the drainage channels carrying off the water when not in excess, (2) *gramshorahad-bheris* or embankments marking out village boundaries, (3) *gram-bheris* or small inner embankments, the object of which is to distribute the rainfall fairly by keeping in each tract of country the amount it actually receives: were they not kept up, the water would not stand on the fields, but would flow off towards the lower levels, swamping the lands there and leaving insufficient moisture for the higher lands. As regards the utility of these last embankments, Sir Henry Harrison wrote in the Bengal Embankment Manual, 1875:—" *Grambheris* can only be resorted to where the country is so level that an embankment to an entire rice *mat* or plain retains a sufficiency of water on each part of the enclosed area without holding up a superfluity on any portion. It is evident that more than a few inches of difference in level

would be fatal to this, and hence it is only in very level tracts, that *grambheris* would work. On the other hand, when *aīls* are resorted to, the water of one field has to drain off (when it is in excess or when it is wished to drain it off) through the adjacent fields, passing from field to field. As, however, in general all fields simultaneously have an excess of water, this proceeding becomes very detrimental to the lower fields unless the decline is sufficient to enable the water to flow off easily. Hence in a very flat country like Hijili the *aīl* system would cause much more inconvenience as regards drainage than does the *grambheri* system, each circuit having its drainage *khāl* common to the whole circuit. Again, the *grambheri* system involves a certain amount of co-operation, which the rest of the embankment system in Hijili has taught the ryots to resort to more readily than elsewhere, though this co-operation is still very imperfect. To this may be added many incidental advantages, which would have their weight *ceteris paribus*, such as that the *grambheris* make useful village paths for men and cattle when the land is under water, that in the event of an outer embankment being breached they may form a useful protection, and that they take up on the whole much less land than the far more numerous field ridges."

History.

Most of the embankments at present maintained as public embankments were in existence before the establishment of British rule. The zamindars appear to have been responsible for their maintenance, but this duty was not properly discharged, most of the embankments being more or less dilapidated. The East Indian Company at first appointed the local officers as *ex-officio* superintendents to watch their condition and see that they were kept in a proper state of repair. Subsequently, by Regulation XXXIII of 1793, the Collectors were placed in charge of all public embankments reared at Government expense and also of embankments in estates which had been brought under *khās* management. At this time two large and heavily embanked estates along the Midnapore coast remained under temporary settlement owing to their peculiarly exposed position. In other large estates in the district, which were permanently settled, though somewhat similarly exposed, Government imposed a cess of $1\frac{1}{2}$ annas per *bigha* and expressly undertook the maintenance of embankments. With these exceptions, it may be stated generally that the duty of maintaining the embankments rested under the Permanent Settlement with the zamindars within whose estates they lay.

While, however, large public works were admitted to be a charge on the State, no specification was to be found of the works

which fell under this category. While the obligation of the zamindars to construct and maintain all other embankment and drainage works was distinctly recognized, no machinery was provided to enforce attention to these duties. This defect soon made itself apparent, and one of the objects of the next Embankment Regulation (VI of 1806) was to provide a remedy for it. It, therefore, transferred the superintendence of embankments maintained at the expense of Government from the Collectors to Embankment Committees, which were vested with a general control over embankments repaired at the expense of zamindars and farmers as well as over those maintained by Government. The Committees were ultimately abolished by Regulation XI of 1829, and their powers were vested in special officers appointed by Government.

In 1837 a Committee was especially appointed to determine what were the obligations of Government in regards the maintenance of the different classes of embankments. The standard by which the Committee judged of these obligations was the actual agreement contained in the *kabuliyaats* of the Permanent Settlement, as interpreted by the correspondence of the period and the actual practice since that date, and as further modified by the utility or the contrary of the works in question. The Committee, taking the different denominations one by one, arrived at the following conclusions. The obligation of Government to maintain *ganguri*, or main embankments was plain. As regards the *hasia* embankments, the Committee contended that Government was liable, and the Board of Revenue summed up on the same side, urging that the *hasia bandhs* outside the cross dams were in fact continuations of *ganguria bandhs*, while those inside might be included in the generic term *bheribandhi*. These views were accepted by Government. The liability of Government as regards *khaibandhi* and *khalkundi* was not open to question, the terms being mentioned specifically in the *kabuliyaats*. *Jalnikasi* was not mentioned in the *kabuliyaats* any more than *hasiabandhi*, but the Committee pointed out that the presumption in favour of this work being done by Government was uniform, and that it was an indispensable portion of the system of agriculture. The Board took the same view, and Government adopted their conclusions. Finally, as regards *bheribandhi*, Government came to the conclusion that as the repair of these petty embankments had been discontinued since 1815, and as complaints had been made for nineteen years, i.e., till after the three successive storms of 1831, 1832 and 1833 had devastated the country, the *grambheris* could not be of much practical value. "Unless,"

it was stated, "stronger grounds than have already been produced can be shown, His Honour is opposed to any expenditure of the public money on account of *bandhs* coming under the description of *bheribandhi*"

For the future maintenance of the embankments, the Committee proposed, and Government sanctioned, an arrangement by which all exterior embankments and subsidiary works should be kept in repair through the agency of the Public Works Department, and the interior embankments and subsidiary works should be made over to the custody of the zamindars with a suitable allowance or remission. In other words, while Government undertook the obligation of maintaining the larger embankments and water-courses, the responsibility for the maintenance of smaller works was transferred to the zamindars, to whom an allowance was made for the purpose. Specific orders were not passed by Government on the question of the maintenance of *grambheris*, the utility of which was questioned, but it was held by Government that "it was under no obligation to keep them up." It was clearly intended that if they were to be kept up at all, they must be maintained by the zamindars and ryots themselves, and the question of their maintenance was left for the zamindars to decide on consideration of their own interest.

This system was done away with in the year 1873, when the Bengal Embankment Act (VI of 1873) was passed. This Act distinctly defined the liability of Government for the maintenance of certain embankments and water-courses enumerated in Schedule D. It placed them under the charge of the Collector of the district and an engineer with carefully defined powers. Power was taken by Government to take over other embankments not included in Schedule D, and to take charge of any water-courses of which it might be deemed expedient, in the public interest, to take charge. It was provided that the cost of such works should be in the first instance advanced by Government, and afterwards realized from the parties benefited. The principal features of this Act were as follows :—(1) It was declared law that the persons benefited are responsible for the expenditure on all necessary embankment and drainage works, except so far as Government accepted definite obligations at the time of the Permanent Settlement. (2) The powers of the executive officers of Government to control works affecting the inundation and drainage of the country were amplified and more clearly defined. (3) The duty of supervising this department and of initiating works was transferred from the Superintending Engineer to the